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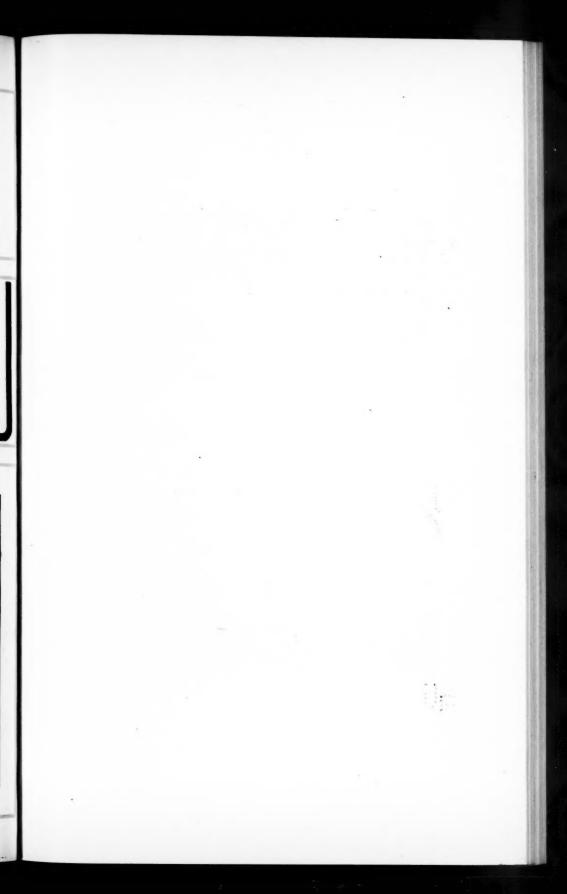
THE Late Summer and Early Autumn Type of Hay Fever is caused by many of the common weeds, as Ragweed, Russian Thistle, Sage Brush-the species differing widely according to locality. To assure specific treatment diagnostic tests are essentiall To assure preseasonal treatment early diagnoses should be made, otherwise the less desirable, though often beneficial, coscasonal treatment will be involved. List of late howering weeds, showing regional disapidation and time of pollination, senson regions.

GIANT RAGWEED Ambrosia trifida

RUSSIAN THISTLE Salsola pestifer

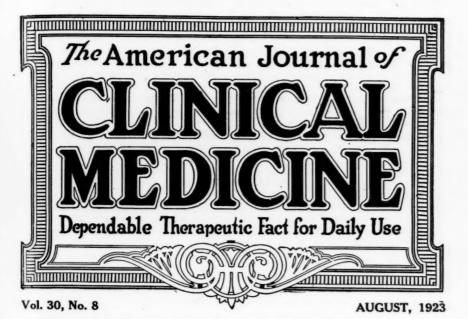
SAGE BRUSH Artemisia tridentata

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Dr. Robert Gray (1829-1922)



Dr. Robert Gray

T O the CLINIC readers of a few years ago, Dr. Robert Gray was a well-known person and one whose frequent contributions to the reading pages of CLINICAL MEDICINE were eagerly looked forward to.

In the more recent years, circumstances prevented his writing as much as he had done and, as we announced several months ago, Doctor Gray passed away at the ripe age of ninety-three, just one year ago.

It is fitting that this remarkable

man should receive more than passing editorial mention. We are happy to present to our readers a sketch of his life that was prepared, with affectionate care and out of a personal friendship lasting for many years, even though maintained only through correspondence, by Dr. J. M. French, who also is one of the older members of the "CLINIC Family." We all of us have learned much from Doctor Gray. The last lesson conveyed through the eloquent pen of Doctor French will not be forgotten.

MODERN TREATMENT OF SYPHILIS

It is a part of the psychoanalysis technic to name certain words, in more or less rapid succession, against which the subject places other words that occur to him and that may or may not be appropriate. For instance, fish—hook; house—door; dog—stone, or cat, or field, or bird, according to the pecularities of the subject. If, even a few years ago, a physician had, in such a test, been given the word syphilis, he would have replied unhesitatingly with "mercury." Possibly, as an afterthought, he might have added iodide of potassium.

That was not so long ago, and the treatment of syphilis infection and of syphilis itself was held to be comprised within the sphere of action of these two remedies.

We have changed all that, and the last few years have added a notable list of remedies to the therapeutic armamentarium of the syphilographer that belong, mainly, to the arsenicals and to bismuth compounds. It is not a figure of speech to say that these new acquisitions have revolutionized the treatment of syphilis and that the chances for definite and, let us hope, permanent recovery, after adequate treatment, are immeasurably better today than they were, even ten years ago. Discussing the selection of remedies in the treatment of the various stages of syphilis (Prens. Med. Argent., Feb. 20, 1923), Dr. Juan B. Arizabalo declares that, today, syphilitics are no longer obliged to subject themselves to periodical and interminable courses of treatment during their entire lifetime, but that the time factor in syphilis therapy has been greatly reduced.

In his very interesting and illuminating article, the author discusses the principal remedies employed for the treatment of syphilis namely, mercury, potassium iodide, the arsenicals, and bismuth, concluding that each stage of syphilis has its particular appropriate remedy. Indeed, he believes that for each luetic lesion there exists a corresponding therapeutic agent.

The action of mercury is exerted against the treponema and also indirectly by stimulating the tissue to produce antibodies that inhibit the further multiplication of the virus. The actual treponemicidal effect of mercury is not as energetic as is that of the arsenicals or the bismuth preparations.

The treponemi idal action of the arsenicals is developed in conjunction with the tissues of the organisms, especially the liver. Living

treponemas, suspended in a solution of arsphenamine, will not lose their motility. However, if they are placed into a solution of arsphenamine, to which macerated liver tissue has been added, the destruction of the spirochetes is instantaneous. It may be assumed that the hepatic cell produces some substanceswhich, together with the arsenic, develops the power to destroy the treponema pallidum.

The newer bismuth salts, it appears, are endowed with energetic treponemicidal action which is exerted directly upon the virus without the assistance or intervention of organic substances.

Thus, the three agents enumerated act upon the syphilis virus in a different manner. Potassium iodide has no germicidal action. However, it modifies syphilitic tissue so as to render it an unfavorable culture soil for the spirochete.

As for the special indications for antisyphilitic remedies, Arizabalo finds that mercury works favorably in visceral syphilitic lesions and that the cyanide seems to have an almost specific action in syphilitic lesions of the eye. Employed together with arsenic, the action of each one is enhanced.

Precautions are required in using mercurials so as to avoid poisoning, amounting from simple enteritis or stomatitis to necrosis of bone, nephritis or directly fatal intoxication.

As to the form in which mercury is employed, mention has been made of the cyanide used for the treatment of eye syphilis, always intravenously and associated with arsenic or bismuth. It frequently produces a rebellious enteritis necessitating the suspension of its employment. The biniodide of mercury is utilized when its beneficial effect on sclerosis (arterial or visceral) is desired. The benzoate or salicylarsenate of mercury may be used when the biniodide is not tolerated. In cases associated with anemia or low nutrition, a combination of cyanide of mercury and arsenate of sodium, administered intramuscularly, is well tolerated and effective, although the injections are painful. Calomel may be resorted to when a very intense mercurial action is desired.

In the employment of the arsphenamines, the possibility of their injurious action upon the liver cells must be kept in mind, and precaution should be taken in cases of hepatic insufficiency. Further, it is to be remembered that the prompt treponemicidal action of the arsenicals may produce and liberate large

quantities of toxins causing fever and irritation of the kidneys through which the toxins are eliminated. It is said that the intense focal reaction (Herxheimer's) to arsenobenzol may be lessened or prevented by preliminary mercurial treatment. The possibility of a nitritoid crisis following the injection of arsphenamine always must be kept in mind. This difficulty is not necessarily associated with the intravenous mode of administration, since it has been observed after subcutaneous and intramuscular injections. Nor does it depend upon dosage, having followed after a large as well as a small dose of the drug. It probably is vagotonic in character.

Another dangerous accident is that of arsenical jaundice, which may either be benign or serious and may even become fatal.

Despite all drawbacks, the arsphenamines have proved of immense benefit and their use has brought it about that the malignant type of syphilis, commonly observed formerly, is no longer seen. The period of contagiousness is greatly shortened. Prophylactically, it is now possible to prevent the actual development of syphilis disease. In short, Arizabalo asserts that the power and efficiency of the arsphenamines are such that through their means the syphilis plague could be eradicated from the world, if all countries would cooperate.

Bismuth is the latest remedy that has been introduced, and recent observations have placed it among the most powerful treponemicidal agents. There are not such objections existing against its employment as against mercury and the arsenicals. At least, unfavorable accidents associated with its administration have not been observed frequently. Barring a few objections, which are slight, the advantages of bismuth are great. Its action on the specific lesions is as powerful as that of the arsphenamines. Many lesions that proved rebellious to the latter were cured promptly by the use of bismuth. Its action seemingly is especially manifest and superior in cases of neurosyphilis. This may be explained in part by the fact that a large amount of the drug is carried into the cerebrospinal fluid. Further, bismuth is efficient in cases of syphilis that resisted either arsenicals or mercurials. Still, occasionally, cases are encountered that do not yield to the administration of this drug.

As to potassium iodide, the author declares definitely that it would not be justifiable to abandon it in favor of the three more effective

agents. It is an excellent adjuvant, possessing almost no disadvantages except those causing gastritis, acne, coryza, etc., in some patients. However, these symptoms of intolerance may be avoided by selecting another form of iodide than the potassium combination. In the cephalea and ostitis of secondary syphilis, the iodides are effective; also in gumma or tertiary syphilis. While the iodides have no direct or indirect action upon the treponema, they ameliorate the syphilitic symptoms and constitute a splendid associated treatment of this serious disease.

The author objects to any standardized or scheduled treatment and insists upon the necessity of individualization. We must be guided by the clinical and serological data which supply the one sure method of establishing a satisfactory treatment for syphilis. In this manner, poisoning can be prevented and insufficient or inopportune treatment avoided. With the aid of this new method, it is now possible to do without those prolonged courses of mercurial treatment that used to be given annually or at least periodically when mercury was the only antisyphilitic agent available. Best of all, if rational treatment is instituted in the beginning, it must be admitted now that, with rare exception, syphilis is distinctly curable.

The intelligent have a right over the ignorant; namely, the right of instructing them-Emerson.

HEALTH EXAMINATIONS

In the June issue of Hygeia, Dr. Haven Emerson, professor of public health'in Columbia University, gives reasons enough to convince the most skeptical that health examinations pay, not only in increased health but also in dollars and cents. "It has grown to be a custom" for people who employ men and women in large numbers in shops and factories "to have each new employe examined to see if he or she is in sound health." And again, "Many of the unions are requiring an annual health examination of their members because they have found this the best way to prevent the illnesses which cost their sickbenefit funds so much." If these people who are in big business find it worth while and economical, there is probably something to it.

The idea of periodic health examinations is gaining ground. Business men and, in short, all level-headed thinking people see the wisdom of it and realize that prevention of disease is far more economical than its treatment. Doctor Emerson's article contains splendid

arguments in favor of periodical health examinations that physicians may employ in discussing the problem with their patients.

Moreover, the people are fully prepared for it through the custom of our colleagues, the dentists, who have them report at stated intervals for dental examinations.

Periodic health examination constitutes an important factor of preventive medicine and the whole chapter of preventive medicine is one to which physicians should pay much attention and they will find it much to their advantage to do so: financially, in the increased and more regular income; practically, in lessened work and greater amount of leisure for study and recreation; socio-economically, because of the improved health of the community and the fact that the physician is enabled, through this means, to reestablish himself in the position of health advisor, which he should occupy by right.

No entertainment is so cheap as reading, nor any pleasure so lasting.—Lady M. W. Montagu.

RETURN TO RELIGION

Commenting upon the remarks of Dr. Wm. W. Keen, as they were quoted by Doctor Bryce, in CLINICAL MEDICINE for June (p. 434), a correspondent remarks: "One of the most hopeful indications today is the tendency of practically all high-grade papers, daily, weekly and monthly, to emphasize the importance of the church and Christianity in solving the issues now confronting us."

In my reply, I expressed the opinion that this greater appreciation of the church, of religion, undoubtedly stands in relation, at least in part, to the fact that the church has receded from its former unvielding, intolerant and often bigoted position. It has broadened out and has grown with the times. archaisms, as the futile struggles of a few narrow-minded literalists against evolution (which they conceive to be atheistic) cannot arrest the progressive tendency of the church to larger and wider tolerance, all of which will inevitably bring about the result that religion, instead of being a Sunday-morning affair, only indulged in in church, will be the powerful moving force of men's actions.

In connection with this, I was much interested in an editorial that recently appeared in the *Chicago Daily News* and which I cannot refrain from reproducing in the following:

Recreation in the Church

In the report of a bureau of church architecture in one of the leading religious denomi-

nations, it is shown that 80 percent of the churches that sought help in their building plans during the last year asked that gymnasiums and other recreational and social quarters be provided. About 2,000 churches were covered by the report.

This item is only one of many showing the changed attitude of religious bodies toward healthy play and recreation. As a matter of fact, recreation for young and old is not only considered a 'necessity, but is recognized as an aid to morals. In fact, it has a religious significance. As Graham Taylor has said, "anyone who helps people to have a good time without doing wrong is performing a spiritual service."

It is well within the memory of many when some strongly religious persons considered it wrong to whistle or take a walk on Sunday and regarded a solemn demeanor as a necessary concomitant of piety. To them it was irreligious to smile or crack a joke, and tears were a sign of deepest reverence. Nowadays, the note of joy and wholesome living which marks Christianity is being emphasized.

The new attitude toward recreation and pleasure is enabling the church to establish itself more intimately in the life of the people. An illustration is found in the opening next Monday of 200 daily vacation Bible schools in churches and settlements, where for five weeks 40,000 boys and girls from 4 to 14 years of age, formerly left to run the streets, will be assembled for patriotic, religious and educational exercises, for craft work, habit talks, hikes, picnics, athletic contests and safety-first campaigns. Previous years have proved the spiritual value of such work.

The primary function of the church now, as always, is the spread of religious truth. Recreation will never take the place of worship, but, in interpreting all phases of life, including the recreational, as religious, the church is living up to its mission.—[The Chicago Daily News, June 30, 1923.]

APPEAL IN BEHALF OF PHYSICIANS AND MEDICAN INSTITUTES IN RUSSIA

Dr. Fridtjof Nansen, 54, rue du Rhône, Geneva, Switzerland, who is secretary of the Russian Aid, publishes the following appeal:

The Russian physicians and the medical personnel in the famine regions of that country are without resources and without means to aid the thousands of sick in their districts.

The hospitals, especially the medical village

centers which were created by the efforts of Russian physicians, cannot function for want of funds, of drugs and of instruments.

The famine regions, where the population is much disseminated by its privation, form foci of endemics and of epidemics which are dangerous not only for Russian but for all of Europe. Infectious diseases of several forms, such as typhus, malaria, etc., are causing terrible sufferings.

It is urgent that relief be granted immediately and that an energetic campaign be carried on against the consequences of the famine. Unaided, our Russian colleagues are not in a position to face the famine.

We appeal to the class consciousness of scientists in Europe and America. We hope that students and physicians in the whole world will respond generously to the request for aid in behalf of their colleagues in Russia.

Contributions may be sent to the Secretary, Doctor Nansen, at the address given in the first paragraph of this article.

Every man has in himself a continent of undiscovered character. Happy is he who acts the Columbus to his own soul.—Theo. L. Cuyler, D. D.

LOWER BIRTH FIGURES AND HIGHER MORTALITY FIGURES

In a statement issued early in June, the Department of Commerce announced that provisional figures compiled by the Bureau of Census for 1922 show lower birth rates than for 1921. For the twenty-four states shown for both years, the 1922 birth rate was 22.7 against a rate of 24.4 for 1921.

On the other hand, there is shown a slightly higher mortality rate for 1922 than for 1921. For the thirty-three states shown for both years, the 1922 mortality rate was 11.9 against a rate of 11.6 for 1921. Of course, there are many factors that might account for this lessened birth rate and higher death rate in the year 1922. Still, it might be asked pertinently whether the tendency existing de facto and amounting virtually to birth control is not manifesting itself more and more emphatically. The proponents of birth control are very active and their teachings are accepted eagerly by many people. Unfortunately, most of those who accept them do so merely because they wish to sidestep the duties accepted tacitly with the marriage contract. Those individual persons in whose cases birth control might be justified either do not learn of it or cannot practice it; at least in a great many cases.

It seems doubtful whether the methods suggested for birth control are either effective or harmless. We are under the impression that injury follows, at least in many cases, and this editorial writer is convinced that his position maintained for many years is justified, after all, namely, that entire abstinence is the only really effective method of birth control.

It is to be hoped that the population of the United States of America will not follow in the footsteps of some of the European people. A persistently falling birth rate has justly been explained as a sign of decadence. We are too young a nation to be decadent and we refuse to believe that we are threatened with national dementia præcox. We believe that the lowered birth rate for 1922 is only a passing incident and that it will adjust itself in succeeding years.

OLD CLOTHES AND THE "OLD ADAM"

It occurs to me that the old clothes, to which the Lady-who-gives-us-orders (collectively) objects to vigorously and disgustedly, old camping outfit, fishing suit, gardening clothes, overalls-"those dirty, nasty old things," are dear to the heart of unregenerated man (and, whisper, of regenerated man, too), not solely because of their association with certain favorite pursuits, be these camping or fishing or gardening or carpentering or what not. They afford an outlet for the inborn and, often, unconscious rebellion against the constraint imposed upon us by existing customs and restrictions. As Hugh T. Patrick says (cf. this journal, July, page 536), "from the cradle to the grave, life is a constant conflict between what we instinctively should like to do and what society bids us do"-or what we do not care to do or what society forbids us

The normal healthy male human animal of eight or ten, or thereabouts, dislikes nothing quite so much as to be decked out in a new suit and to have to be careful lest it be spotted and "spoiled." Sakes alive! Doesn't Mother know that it won't be right and comfortable until it has worn so shabby and is so spotted that any care would be futile? Equally, the youngster's immediate paternal relation stands in constant fear of housecleaning for, then, with deadly and fatal certainty, some cherished ancient and, therefore, comfortable garments, shoes, slippers and such are relegated to the Salvation Army box or are quickly sent to the rummage sale, lest the (theoretical) master

of the house discover the rape and prevent its execution by brutal force.

The female of the species is not so much afflicted with this incomprehensible devotion to the "horrid old things," at least not during adolescence and during the productive years of matronly life. Later on, when the hair grays and the tiny wrinkles show, indicating that, some time (perhaps in a hundred years or so), old age will commence to approach, old clothes, old shoes, old cors—beg pardon! must not talk out of school; but, anyway, old things are no longer treated with such contumely. Indeed, even Mother deigns, and likes, sometimes, to sit down in comfies, never minding how she looks.

Thé young male, too, during those trying years when he has become conscious of how nice the girls can be, especially when he has felt certain definite, specific, one-girl attractions, eschews old things and decorates his person as proudly as any peacock or pheasant might wish to emulate. However, this young male is temporarily sick, pathologic, non compos mentis. His illusions and delusions and hallucinations render a normal functioning of the mens sana in corpore sano impossible-for a time. After a while, to be sure, when the knot has been tied, the novelty of double harness has worn off, and life has reassumed its wonted, everyday aspect, the natural male characteristics come to the fore once more and, soon, the old camping or fishing suits are inspected fondly; perhaps donned on the sly. At least, if the grass needs cutting, the lawn wants watering, if any carpentering or other odd job is to be done around the house, the old overalls are extracted and put on with secret and unconfessed but, nevertheless, real satisfaction.

Why is it? The young male does not ask the question. He just knows that he feels much more comfortable and untrammeled in old clothes, which he is not afraid to crease, to spot, to spoil. So, when he is decked out in his finery, he transmutes it into old clothes by the easy expedient of climbing a tree or running after the watering cart or some other equally simple but effective agent for ageing things. His daddy cannot do that. He must defer to certain indisputable restrictions and inhibitions that are imposed upon his daily conduct by custom. Still, when he has a chance to get into those ancient togs, watch him grin. He stretches himself as comfortably as old Towser who just has been lying in the dust, sunning himself. No need to be afraid of soiling his hands, or of kneeling in

the grass, or of letting the hose nozzle go astray. What if a little wetting results? It does not matter. A good soaking in the tub followed by the cold shower will remedy all that. It is not so much that we are crazy about pushing the lawn mower up and down the lawn, or that we like getting all hot and sweaty and tired, gardening. It is that there is an opportunity for removing the inhibitions, the restrictions of custom; that we like to be natural for awhile, and have a good time, even though hands and face be dirt-streaked and the pants not pressed.

The love of the male human for old clothes is a defense reaction against the everlasting inhibitions. And, so, we have safely come down (or is it up?) to Freud, who explains everything that happens to us. Ne'er mind, though; even if it is a defense reaction, it is jolly nice. If the "old Adam" has to come out (and I think it is much better for him to get an occasional airing), my vote is in favor of old clothes. They are a safety valve against the ennui of good behavior prolonged unduly. They make possible a let-up from too strenuous devotion to les convenances. They are much better, in the end, than a dangerous meddling with bootleggers and their nefarious works, better than explosions in other, more dangerous, directions.

Thanks, I feel better. The lady-who-gives-me-orders has had so many unkind things to say about my "filthy old overalls," that I was hard put to it to find an excuse for my liking and devotion for them. Now that I have explained their raison d'être to my perfect satisfaction, I shall go home and put them on and water the lawn. So long. See you later.

P. S.—I have not mentioned getting all messed up working on the car, in the garage or on the road. The answer is easy: I don't own an automobile; not even a Ford. Don't need one for business and as for pleasure—, well opinions differ about that. There, though, old clothes are suitable, if ever.

Recreation is intended to the mind as whetting is to the scythe, to sharpen the edge of it, which otherwise would grow dull and blunt—as good no scythe as no edge.—Bishop Hall.

OUR HOMEOPATHIC COLLEAGUES

It goes without saying that Dr. Edward H. Ochsner's reference to Oliver Wendell Holmes' essays on "Homeopathy and Its Kindred Delusions" (this Journal, June, p. 393) would give rise to numerous comments, most of which, as might be expected, were condemnatory of Doctor Ochsner's adverse criticism of

the Homeopathic teachings. We had refrained from saying anything on that matter editorially, in the June issue of CLINICAL MEDICINE, because we desired to see just how our subscribers would react to it.

One of our correspondents admitted, frankly, that, at first, he got angry and wanted to stop the Journal, but he decided, after all, to continue his subscription. Another one says that he has read the Journal for ten years and can recall having enjoyed many articles which showed an unusual liberality on the part of the editors toward things savoring of Homeopathy. At the same time, after having read Doctor Ochsner's article, he decides not to renew his subscription.

The expressions of appreciation, of editorial fairness and liberality, in our policy of yielding the floor to both sides of any problem are, we believe, merited, because it has always been our rule to extend a hearing to everyone who had an honest opinion to express, whether this opinion agreed with ours or not. To acknowledge that policy and then to discontinue his subscription, as one physician has done, because we printed something that he did not like, makes one smile. It is about as ludicrous a performance as could well be observed.

What pleases us particularly is the good sense displayed by one of our correspondents who thanked us for publishing Doctor Ochsner's article and who confers with those other fellows' (not necessarily Homeopaths but rather Osteos and Chiros.—Ed.) because he wishes to see what they do. And he is right. How on earth can we say that people with whom we disagree are wrong, if we do not know their methods fully? Where is the justice in condemning others with whose teachings and methods we are unfamiliar?

It seems necessary for us to assure our Homeopathic and our Eclectic friends that, editorially, we have a great liking for them and also a good deal of respect for the care that they observe in their drug treatment, in determining indications and in many other ways. While we must admit that the "proving" of Homeopathic remedies seems to us rather overdone, and is made to include a lot of things that can have no possible connection with the dose of medicine swallowed, it must be realized that the study of drug action is fostered diligently and that we of the old school might well follow their example in many ways.

The funniest thing in this entire matter is that our good correspondents, who stand up

so energetically for the Homeopathic school, defend something that actually hardly exists. We doubt whether there are one dozen simon-pure Homeopathic physicians in this country today. A physician friend, to whom we submitted the question, said that there were only two.

Now-don't get excited and don't talk all at once, please! Just read that sentence again. By simon-pure Homeopathic physicians, we mean those who strictly and closely follow Hahnemann's teachings regarding the treatment of sick people or, rather (as he actually gave it) of disease symptoms; while they eschew all other therapeutic measures, methods and weapons of any kind. The editor remembers having met one such exclusive Homeopathic physician in a professional experience of over thirty years. He counts a good many friends among Homeopaths, whom he values highly. Not one of them, with that single exception, is an honest-to-goodness, actual and exclusive Homeopath. They all are physicians rather than Homeopaths, in so far as they practice all methods that come to their attention and hold fast to the goodwhich, of course, is as it should be and which is far superior to any "Organon" teachings that were ever promulgated.

We understand that there are seven Homeopathic schools in this country now. We quite admit that, in everything but Materia Medica, the curriculum has been adopted in conformity with the high standard of requirements prevailing today. The graduates of these schools, for several years, have ranked well, and it can not be claimed that their study of the Organon does them harm. The harm would come if they should take Hahnemann seriously in regard to his peculiar teachings relative to the underlying cause of seven-eighths, at least, of all chronic diseases which, Hahnemann says, are "produced by the existence in the system of that infectious disorder known in the language of science by the appellation of Psora but to the less refined portion of the community by the name of Itch." the words of Haimemann's "Organon," this Psora is the sole, true and fundamental cause that produces all the other countless forms of disease which under the names of (follow 32 names of diseases and symptoms) appear in our pathology as so many peculiar distinct and independent diseases.

Righto! We are at once and inevitably reminded of "bovine syphilis" which, today, is being accused as the cause of virtually every chronic disease, by Abrams.

A GOOD LOCATION

Our good friend Dr. William Thomas Thackeray of Fowlerton, Tex., informs us that there is a good opening in that place for a young physician. Fowlerton is about sixty miles southeast from San Antonio. It is a thriving young town and is the center of a steady and settled population of a fifteen-mile radius. While the pay is slow, it is good.

Doctor Thackeray has many nice things to say about the climate of that region and is anxious to get a good physician there. He will be glad to make the introduction and can be of great assistance as he is one of the oldest settlers of the place.

Every man with an idea far ahead of his times has had to suffer his way to success.—Forbes' Magazine.

MELLON INSTITUTE OF INDUS-TRIAL RESEARCH

We have just received the tenth annual report of the Mellon Institute of Industrial Research. This institute maintains an industrial fellowship system which is a center for technical investigation in chemistry and allied subjects. Its purpose is, to promote industrial success through scientific research; in other words, to find new materials and new processes for industrial development and to advance manufacturing through the application of scientific methods to industry. The institute is a part of the University of Pittsburgh.

In order to share in the advantages of the institute, any individual industrialist, any industrial company or an association of manufacturers having a suitable problem, or group of problems, requiring investigation may become the donor of an industrial fellowship, providing the problems are of sufficient scope to warrant the services of at least one research worker for a period of not less than one year; and also providing that there is no other investigation in progress in the institute on the research topic which is of interest to the prospective donor.

Such research work is, of course, held in trust, knowledge concerning its progress and its subject matter being withheld from the public, if it is so desired. On the other hand, knowledge gained by one industrial fellow along one investigational line becomes available to another research worker providing that such cooperation does not violate a trust.

It can readily be seen that the work done in this institute carries with it great possi-

bilities for good. Some of them interest physicians directly, some indirectly. Among the subjects being worked on, at the present time, by industrial fellows, we mention: synthetic resins, bread, protected metals, food container, edible gelatin, ester, carbon dioxide, heavy chemicals, salt, medicinal.

RELATION OF THE PRESCRIPTION CHEMIST TO THE PHYSICIAN

"The Rx. chemist, even when urged so to do, should always refuse to prescribe or attempt diagnosis. He should, under such circumstances, refer applicants for medical aid to a reputable, legally qualified physician. In cases of extreme emergency, as in accident or sudden illness on the street, in which persons are brought to him, pending the arrival of a physician, such prompt action should be taken to prevent suffering as may be dictated by humanitarian impulse and guided by scientific knowledge and common sense.

"The Rx. chemist should not, under any circumstances, substitute one article for another, or one make of an article for another in a prescription, without the consent of the physician who wrote it. No change should be made in a physician's prescription except such as is essentially warranted by correct pharmaceutical procedure, nor any that will interfere with the obvious intent of the prescriber, as regards therapeutic action.

"He should follow the physician's directions explicitly in regard to refilling prescriptions, to copying the formula upon the label or to giving a copy of the prescription to the patient. He should not add any extra direction or caution or poison labels without due regard for the wishes of the prescriber, providing the safety of the patient is not jeopardized.

"Whenever there is doubt as to the interpretation of the physician's prescriptions or directions, he should confer with the physician in order to avoid a possible mistake or an unpleasant situation.

"He should never discuss the therapeutic effect of a physician's prescription with a patron nor disclose details of composition which the physician has withheld, suggesting to the patient that such details can be properly discussed with the prescriber only.

"Where an obvious error or omission in a prescription is detected by the Rx. chemist, he should protect the interests of his patron and also the reputation of the physician by conferring confidentially upon the subject, using the utmost caution and delicacy in handling such an important matter.

"We believe these to be the correct duties of a Rx. chemist in his relations to the physician, and as Rx. chemists we adhere strictly to them.

-X X Drug Company."

A correspondent who sends us the foregoing letter remarks:

"This letter sent to the physicians of a lead-

ing industrial center by a drugstore seeking their prescription work is suggestive. It is highly commendable and restores the druggist to his original place as the pharmacal collaborator of scientific medicine. It is to be regretted that the whole thing might remain resting right here.

"The sorry side, however, must be told. Unless a drugstore has a sufficient patronage to make it a commercial success, it must gain its trade by any method available—or go into bankruptcy. Counter prescribing, patent nostrums, sharp schemes, and petty merchandizing follow as a natural result. Not one drug store in the hundred can qualify under the terms of this letter.

"This old question has been thrashed out time and again, leaving it just where it started. Both, physician and druggist, must look out for themselves—and let the devil take the hindermost. Their cooperation must be largely incidental and adjusted to their personal needs and circumstances.

-B."

[Theoretically, the views expressed in the letter from the X X Drug Company are indubitably correct. The druggist, to whom the physician entrusts the compounding of his prescriptions with which he confidently expects to benefit his patients, may not prove untrue to his trust by discussing adversely either the prescription itself or the diagnosis made by the physician, as it has been imparted to the members of the family.

The doctor touches upon the sorry side of these many phases of the drugstore business which have been the subject of much acrimonious and also of more gentle discussion. The drugstore, it is said, must carry a multiplicity of goods in order to exist. Indeed, its function, virtually as a department store, is defended with the all-powerful argument of the dollars-and-cents question.

We can not but think that a drugstore that is a drugstore pure and simple could exist if there were not so many of it. As far as we know, a goodly number of such exclusive drugstores (or chemists' shops, or apothecaries' shops) exist, for instance, in Chicago, although most of them are situated in those skyscraper office buildings that possess a very considerable population made up of physicians. However, there is, in this city, at least one drugstore, down town, which is known to be only a drugstore and absolutely deals in nothing else but drugs and medical supplies.

We are under the impression that druggists

are compelled to enlarge their sphere of influence, as it were, and to diversify the goods they carry, including cigar counters, candy counters, soda fountains, and all the rest of it, for the reason that there are by far more drugstores in the city than are necessary to fill the needs of the population. If some sort of a plan could be drawn and if the excessive number of drugstores could be cut down, we believe that our friends, the druggists, could devote more attention to their actual work and they would not be compelled so much to be merchants on a large scale.

We admit that the subject is far too large to be discussed in an editorial comment.—Ep.]

A man's appearance falls within the censure of everyone that sees him; his parts and learning very few are judges of.—Steele.

MAKE YOUR DEBTOR YOUR FRIEND

It has always been a sore problem with physicians how to deal with those of their clients who are slow pay. To enforce payment by undiplomatic duns and, possibly, by recourse to law, usually results in the "gaining" of several very good and active enemies. Not only is the debtor, who has tried to beat the doctor out of his justly-earned reward, his enemy for life, but he has a following in his family and in his friends whom he prejudices likewise against the unfortunate physician.

And, yet, it is not well either for the physician or for the patient himself that the latter should be permitted to get away with his little plan of doing the doctor. Moreover, it happens, many times, that the debtor is hard up and actually can not discharge his obligation.

Similar conditions prevail where the doctor himself becomes the debtor, especially when he is indebted to a pharmaceutical house for medicines that he has used in his practice. Some doctors are desperately slow pay, for the reason that they are paid so slowly and irregularly by their patients. Some are tardy in meeting their obligations because they dislike everything pertaining to business. They fail to realize that promptness and regularity would make them preferred customers of their supply houses, that they might save money by paying their bills early and taking the discount; that they would benefit indirectly by observing strict business methods and enforcing them in the case of their clients.

We are led to these musings by having called to our attention a letter from a certain

physician customer of The Abbott Laboratories who evidently had been behind-hand with his payments and who had received a dunning letter. The correspondent in the credit department of The Abbott Laboratories understands his business. That is quite manifest. He is a psychologist and knows how to get his correspondents to react to his duns and yet remain his friends and the friends of the firm.

Since the letter of which we speak possesses several points of interest, and especially since it carries a lesson that may be useful to all of us, we venture to reproduce it herewith. It is as follows:

"I wish to thank you for your very kind and appreciated letter of the 8th, inst. A letter like this is very encouraging and is out of the ordinary, for one in your position, to write to those who are greatly behind with payments to the firm they are working for. I shall keep this letter on file as an example of the qualities of a whole-hearted and a real true-to-goodness business man, and to remind me of the good spirit, gentleness and friendliness of one whom I loved (though never saw), who originated the firm for whom you are working, the late Dr. W. C. Abbott, and I am sure that the attitude of the whole of the business administration is in keeping with the grand and noble principles of its founder.

the grand and noble principles of its founder. "Without personally knowing him, I have ever felt friendship, affection and fraternalism for Doctor Abbott, and the news of his death brought me the pangs caused by the loss of a great friend. This, though, is small wonder, when I have associated with him from my youth, reading him, all bubbling over with inspiration and good cheer. His journal was the only one, out of all those published, that had a personal touch, something that kept me hungry for the next issue, and made me feel better in every way. To me, Doctor Abbott still lives in the personnel of The Abbott Laboratories and in the columns of The

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"Again, I thank you for your fine letter, all of which I have digested, and the goodly advice appreciated and taken for the future.

[The good advice, of which this correspondent speaks appreciatively, consisted in the suggestion to collect more closely the sums due him from his patients. People seem to have plenty of money to spend on automobiles, gasoline, moving-picture shows, theaters and other things. Yet, they will often let their honest debts go by the door. People that owe you money go riding past your office, bent on all kinds of pleasures and, then, they call you out in the dead of the night to take care of their sick families; and make you wait for your money. This is neither just nor fair. It is the part of wisdom to make people under-

stand that the physician's work entails a business side just as any other calling or occupation. If the "business" of the doctor is neglected, his work will suffer and, in the end, his patients are the losers.

Physicians should collect far more closely than they do, where the patients can pay their bills. We do not mean, where they happen to have the money handy; but we mean, where they are financially in a position to discharge proper indebtedness incurred. It is different in the case of poor people. We would be the last ones to suggest that any physician should attempt to take blood out of a stone. Many times, gratuitous or partly gratuitous attendance upon people who are poor, without their fault and who honestly try to go through life decently and respectably, may be a privilege. It always is a good investment, because it makes for good will. And, good will is an asset.

Those patients, however, who are financially able should be made to understand that their bills to the doctor are properly preferred debts and that they should be discharged within thirty days, unless special arrangements have been made.—Ep.]

Let men laugh when you sacrifice desire to duty, if they will. You have time and eternity to rejoice in.—Theodore Parker.

"THE STORM WAS FOR THE BEST"

On page 590 of this issue of CLINICAL MEDICINE there appears a sonnet which the author very kindly permitted me to print. She is a young lady just out of high school who, to my ancient eyes, appears to be but a child; but, who, nevertheless and quite evidently, has a personality, a mind of her own, and uses it.

When her mother read that sonnet to me recently, the concluding sentence impressed itself in my mind. In fact, it stayed there and set up a train of thought which, it seemed to me, would lend itself as a text for a strong editorial on the text: "The Storm Was for the Best."

It makes one think of so many things, among which, naturally, the scriptural "whom the Lord loveth He chasteneth" intrudes first of all. To tell the truth, that very fact makes me pause. One might easily talk in the strain opened up by this intriguing sentence—"the storm was for the best"—but, at least in my present frame of mind, what I could say would be trite.

Yet, the thought will not down. It persists [Continued on page 590]

Teading Articles

Compounds of Bismuth in the Treatment of Syphilis By GEORGE W. RAIZISS, M. SEVERAC and W. WINICOV, Philadelphia

AFTER the discovery of the remarkable derivatives of arsenic, it was quite natural for investigators in the field of chemotherapy to undertake a search for similar properties in the organic derivatives of the elements allied to arsenic. One of these elements studied was bismuth, the trypanocidal properties of which were first discovered by Robert and Sauton Ann. de l'Inst. Pasteur, XXX. 261 (1916)]. Most of the experimental work on this subject, however, was done by Sazerac and Levaditi. These two men investigated the action of a number of bismuth compounds in experimental animal infections and came to the conclusion that of all these compounds thus far prepared the tartrobismuthate of sodium and potassium was the most effective. They found it to be easily tolerated by rabbits in doses of 50 to 60 mg. per kilo of body weight, when administered intramuscularly or subcutaneously. Doses of 100 mg. produced toxic effects, while 200 mg. per kilo resulted in death within two to four days. Intravenously, however, the compound was highly toxic, a dose of even 5 mg. causing death within a few days. This superiority of the intramuscular route is due to the delayed absorption of the drug by the tissues in which it is temporarily fixed. Müller [Münch. Med. Woch. 69, 547 and 1659 (1922)] has proved this to be the case by the decreasing intensity of the shadow cast by the bismuth upon ræntgenograms taken on successive days after intromuscular injection.

The therapeutic action of the tartrobismuthate of sodium and potassium is interesting. Sazerac and Levaditi [Compt. rend. 172, 1391 (1921)] observed its curative action upon experimental syphilis in the rabbit and upon the spontaneous spirillosis (Sp. cuniculi) of that animal. The administration of 60 mg. per kilo of guinea pig freed the animal of try-

panosomes after 48 hours, and a dose of 100 mg. produced the same results twenty-four to forty-eight hours, but a relapse occurred after twelve to fifteen days. In another paper [Compt. rend. Soc. de Biol. 85, 430-31 (1921)]. the same authors report that, when guinea pigs infected with Nagana trypanosomes are injected subcutaneously with 200 mg. of the drug, the animals subsequently show a relapse. Smaller doses cause more frequent relapses which, however, may be caused to disappear by renewed treatment, With timely renewal of treatment, the relapses may even be prevented. In this manner, the life of an infected guinea pig was prolonged to 80 days, while the control animals lived only 25 days. But permanent cures were not obtained. These results agree with those obtained by Adler [Ann. Trop. Med. and Parasitol. XV, 433 (1921)] who likewise was unable to cure guinea pigs infected with the Nagana trypanosomes by means of sodium tartrobismuthate.

Sazerac and Levaditi further investigated the prophylactic qualities of the drug [Compt. rend. 174, 128 (1922)], and found that an injection of 50 mg. per kilo, three hours after a preputial infection, decreased the treponemic lesions in rabbits. Spirochetes were absent after sixty and sixty-three days. Administration per os had some prophylactic effect, while application as a pomade to the infected regions, one to four hours after the infection, in some cases prevented the disease in animals contaminated by sexual contact.

Personal Experiments

Our own experiments with potassium tartrobismuthate also indicate that intravenous injections of this drug are highly toxic, much more so than the intravenous administration of organic arsenicals, such as arsphenamine and neoarsphenamine. In this respect, the potassium tartrobismuthate resembles the organic compounds of mercury. Thus, for white rats, the maximum tolerated dose per kilo body weight for arsphenamine, by the intra-

Contribution from the Dermatological Research Laboratories.

venous route, is 100 to 160 mgs.; neoarsphenamine 200 to 400 mgs.; bichloride of mercury 2 mgs.; mercurophen (sodium oxy-mercuryortho-nitro phenolate) 6 mgs., while, for rabbits, mercurosal (disodium hydroxymercurisalyciloxyacetate) and flumerin (hydroxymercurifluorescein) shows a maximum tolerated dose of 10 and 30 mgs. respectively. Now, when white rats were similarly injected with potassium tartrobismuthate, a pure sample of which, containing 68.5 percent of bismuth, has been prepared by the authors, those of the rats which received as much as 10 mg. per kilo continued to live after five days, while doses of 15 mgs. per kilo killed them within three days. The technic followed in these tests was that standardized by the Hygienic Laboratory at Washington [Bull. No. 113, Hygienic Lab. July, 1918; Amer. J. of Med. Sciences, 160, 188 (1920)].

We were also interested to find out what effect, if any, the compound under discussion had upon the kidneys of the experimental animal. We, therefore, took a commercial sample of Luatol, which is a tartrobismuthate of sodium and potassium, analyzed it for bismuth, and then injected a rabbit intravenously with a quantity of the solution calculated to correspond to 3 mgs. of the solid compound per kilo. The results were as follows:

one days. The results, therefore, seem to indicate that intravenous injection of Luatol in amounts one-half of the maximum tolerated dose, which was found by us to be about 6 mgs., produces severe nephritis, which only clears up about twenty-one days after the injection. Here again, the resemblance of the action of the drug to mercurials is striking.

Intravenous Route Dangerous

From the above it is clear that intravenous injection of potassium tartrobismuthate is harmful to the animal. However, when administered intramuscularly into the muscles of the leg, we found that the drug is very well tolerated, the compound prepared by the authors producing no untoward reaction of any sort even when doses as high as 70 mgs. per kilo have been employed. According to the animal experimentation, then, if the relationship to the weight holds good, a man weighing 60 kg. should tolerate over 4 Grams of this compound.

We further investigated the effect of the intravenous administration of the drug in experimental trypanosomiasis (Trypanosome Equiperdum), the animals being infected intraperitoneally and tested according to the method of Voegtlin and Miller [Public Health Report 37, 1627 (1922)]. Our results indicate that the compound thus administered in doses

	Weight of Animal in Grams	Mgs. per 100 cc. of Blood		
Time when blood was taken		Non-protein Nitrogen	Urea Nitrogen	Creatinine
Before injection	3400	34	14	1.5
2.5 hours after injection	3490	38	15	
3 days after injection	3250	76	51	2.0
7 days after injection	3360	57	30	
10 days after injection	3300	50	28	1.8
15 days after injection	3245	40	24	
18 days after injection	3290	40	21	
21 days after injection	3290	36	16	1.6

A perusal of the figures in the above table will show how rapidly an intravenous injection of Luatol affects the kidneys. An increase in the non-protein as well as urea nitrogen of the blood, and probably also of creatinine, is apparent within 2½ hours after injection. This increase is more than doubled during the next three days, after which it begins to decline, and it is not quite normal even after twenty-

up to 5 mgs. per kilo has no destructive effect upon the trypanosomes. In fact, it practically does not influence the course of the infection, as the animals thus treated all died within forty-eight hours.

Bismuth in Experimental Syphilis

But, if bismuth, like mercury, has no effect upon trypanosomes, it also resembles the latter in exerting a powerful influence in experi-

mental rabbit syphilis. In this set of experiments, the method of infection was that developed by Brown and Peace [J. Exp. Med. 31, 475 (1920)]. A rabbit with a progressing testicular lesion due to Spirochæta pallida of the Nichols strain was anesthesized with ether, the lesion excised with aseptic precautions, and the material thus obtained emulsified by grinding in a mortar with a few cubic centimeters of normal salt solution. If dark field examination showed the presence of many organisms, about 0:5 Cc. of the emulsion was injected into each testicle of a normal rabbit, the lesions usually appearing three to four weeks after infection, when treatment was instituted. Our results appear in the following table:

On the basis of our own experiment, therefore, potassium tartrobismuthate should have a very marked effect in the treatment of human syphilis.

In Human Syphilis

In the treatment of human syphilis, the results obtained with bismuth are very favorable. Fournier and Guénot, who first applied it clinically, have already treated several hundred patients, and recommend its use in a suspension of oil. The route of administration is intramuscular, which is decidedly less painful than the subcutaneous injection. The intravenous route is absolutely contraindicated. These authors administer the compound in a 10 percent suspension in olive oil, at first 0.2 Grams daily and then 0.3 Grams twice weekly

RABBIT No. 54E.

Wt.	Dose Gms.	Route	Days After Injec- tion	—Clinical Notes—		Dark field exam, for
Grams	per kilo			Left testicle	Right testicle	spirochetes
2280	0.003	^		Medium sized node. Enlarged.	Medium sized node. Very slight edema. Enlarged.	++++-Very active
				Condition unchanged.	Condition unchanged.	++ Quite motile
			2	Smaller.	Smaller.	-Negative
			3	Node smaller.	Condition unchanged.	-Negative
	*		7	Normal.	Several small nodes.	-Negative
		snor	14	Normal.	Very small node.	
		Intravenous	21	Very small node.	Normal.	
		Intr	28	Normal.	Normal.	
			35	Normal.	Normal.	
			42	Normal.	Normal.	
			48	Normal.	Normal.	
		1	55	Small node.	Normal.	

Note—++++ means very numerous. ++ means 4-6 in each field.

See page 554 for table showing result of intramuscular injection

From the above it will be seen that 3 mg. per kilo injected intravenously exert a rapid favorable effect upon the syphilitic lesions in rabbits, but it is not sufficient for a complete cure. Judging by the disappearance of the spirochetes 48 hours after injection, its effect should be considered powerful.

Intramuscular injection is more encouraging. By this route, a much larger dose can be safely given, especially when suspended in oil. throughout the first month during which a total of 2 to 3 Grams of sodium and potassium tartrobismuthate is given. After this period, the patient may receive 0.2 to 0.3 Grams weekly, or else he may be allowed one month rest, after which the regular course of treatment is repeated. Pomaret, however, states [Urot. and Cut. Rev., 26, 766 (1922)] that the doses used by Prof. Jeanselme and his collaborators were almost always 0.10 to 0.15 Gm, by in-

tramuscular injection of 1 Cc. or 1.5 Cc. repeated every two days, and that the total number of injections never exceeded 17 to 20 in any one case. Pomaret himself (loc. cit.) goes even further and recommends, on the basis of his own investigations, doses of 0.2 to 0.03 Gms. every two or three days as the proper dose. With this dose, he claims never to have observed any of the "reactions" reported by the various other investigators.

Under the tartrobismuthate treatment, spirochetes disappear from the primary lesion after the first to the third injection. Cicatrization is rapid, the chancres being healed, as a rule, within two weeks. The remedy is particularly useful in the contagious stages

companied by high fever, insomnia, very marked asthenia, complete anorexia and intense, persistent cephalalgia. After the fourth injection, the general condition improved, the appetite returned, the insomnia disappeared, and the patient recovered a good general state of health. The temperature sank by lysis after the fifth injection. In two other cases with violent cephalalgia, the latter disappeared in about ten days, while in still another case of circinate, infiltrated syphilides of the forearm and the groin, the rapid disappearance of the infiltration and the transformation into simple pigmented macules occurred in ten days.

Müller (loc. cit.) corroborates the findings

RABBIT No. 47E.

1760	0.020	-		Enlarged. Large edema. Medium node.	Enlarged. Small edema. Medium node.	++-Very active
			1	No edema.	No edema.	+-Quite motile
			3	Smaller and softer.	Smaller and softer.	-Negative
			7	Normal.	Normal.	
		1	14	Normal.	Normal.	
		Intramuscular	21	Normal.	Normal.	-
		amus	28	Normal.	Normal.	
		Intr	35	Normal.	Normal.	
-			42	Normal.	Normal.	
			48	Normal.	Normal.	
			55	Normal.	Normal.	

Note—++ means 4-6 in each field. + means 2-3 in each field.

of the disease and, according to Fournier and Guénot (loc. cit.), causes more rapid and complete disappearance of the contagious lesions than does arsphenamier. In secondary syphilis, the cutaneous lesions usually disappear within a week, while tertiary lesions heal up almost just as rapidly, especially cases of gumma and tertiary skin and mucous membrane manifestations. According to Veber [Compt. rend. Soc. Biol. 86, 891 (1922)] bismuth acts energetically on cutaneous and visceral lesions, the latter, as well as hepatic and articular manifestations, giving way after 4 to 5 injections.

Pomaret (loc. cit.) reports the remarkable effect the drug had upon the fever and upon the general health of one of his patients. This was a woman with a secondary eruption ac-

of the above investigators and emphasizes the very good results he obtained in the treatment of secondary syphilis accompanied by hypertrophic papules and rupeal syphilis which ordinarily resist the usual methods of treatment. He also points out the particular value of the bismuth compound in those cases where the spirochetes have become arsenic-fast. Such cases improve rapidly under the bismuth treatment.

Villemin has treated a number of cases of primary, secondary and tertiary syphilis with tartrobismuthates and reports [Urol. and Cul. Rev. 27 No. 1 (1923)] that the favorable influence of the medicament cannot be doubted. The general symptoms, such as fever, pains in the bones, articular pains, and general fatigue are beneficially influenced, while in one of his

patients, who had an absolute intolerance for arsenicals, the papulous lesions of the palmar surface of the finger disappeared within a month. Villemin is also of the opinion that, in tabes, bismuth salts are not inferior to arsenicals in improving disturbances of movements, fulminating pains and neuralgias. It is in fact the remedy of choice, since the passage of the salt into the cerebrospinal fluid has been shown by many authorities who have studied the absorption and elimination of this new drug.

Levy-Birtg, Gerbay and Phillipreau. [Ann. des Mal. Vén. 17, 174 (1922)] direct attention to the rapid effect of the tartrobismuthate on visible lesions; while Marie and Fourcade [Ann. de PInst. Pasteur 36, 34 (1922)], reporting on a large number of cases, state that, although the influence of the drug on general paresis is practically nil, its effect on localized neurosyphilitic processes is more favorable.

Ahlswelde points out [Urol. and Cut. Rev. 27, 92 (1923)] the important fact that, of all the observations made to date on the treatment of syphilis with bismuth compounds, no one has yet mentioned about any impairment of the kidneys during that treatment.

Simon and Bralez-sum up the results of their experience in 113 cases of syphilis [Bull. Méd. 36, 523 (1922)]. They state that treponemes disappeared from chancres and from the mucous lesions of secondary syphilis within two to fourteen days. Chancres were healed in the average of fourteen days after a total of four injections, whereas the lesions of secondary syphilis healed after six injections. They also treated several cases of cerebrosyphilis and tabes dorsalis and report notable improvement in the clinical symptoms of several of these cases, although no change occurred in the cerebrospinal-fluid findings.

Effect on Wassermann Reaction

As to the effect of the bismuth treatment upon the Wassermann reaction, the data of most of the more recent investigators are too meager to render any definite opinion, but they all seem to agree that its influence is not as rapid as that of arsphenamine. However, the men who had the most experience with this new mode of treatment are more definite in their statements. Fournier and Guénot observed that, in cases showing a negative Wassermann at the beginning of the treatment, the sero-reaction remains negative, while in

those showing a positive reaction the Wassermann test becomes weaker after the first series of injections and gradually becomes negative after the second or third courses of treatment.

Furthermore, of the eighteen cases observed by Müller for a longer period, eleven showed a negative Wassermann four weeks after the completion of the course of treatment, while in the remaining patients the sero-reaction became negative within twelve to fourteen weeks after treatment.

Untoward Effects and Precautions

Very few untoward effects following bismuth treatment have been reported. The one most frequently mentioned is a tendency toward stomatitis similar to but usually not so severe as that following the use of mercury. A marginal pigmentation generally appears in the gums, analogous to the well known lead line. But, with careful dosage, Pomaret prevented even this reaction. The stomatitis is generally a fusospirillary infection similar to that of Vincent's angina, and disappears within two weeks after bismuth treatment is discontinued. Its disappearance may be facilitated by the methods employed in the treatment of Vincent's angina, and may even be rapidly cured by the local application of powdered potassium tartrobismuthate. Bismuth sulfide appears in the saliva, and in a few cases reactions, such as cramps, malaise, nausea and headache have been observed; but the reactions of all types were generally mild and did not seriously interfere with the progress of the treatment.

A few words may now be said with regard to precautions to be taken in the treatment outlined above. These are: (1) the absolute contraindication of the intravenous route of administration, (2) the necessary care of the hygiene of the mouth on the part of the patient during the treatment, and (3) the indispensable supervision of the renal function, on account of the occasional complication, albuminuria, although Müller did not observe a single case of the latter in any of his patients.

In conclusion, it may be pointed out that the indications for the employment of bismuth in the treatment of syphilis, upon which all clinicians are agreed, are: (1) cases affected with specific lesions which are resistent to arsenic and mercury; (2) cases in which relapses occur; (3) and patients who show intolerance to arsenic and mercury.

Cancer of the Breast

A Study of 250 Cases in Private Practice By L. DUNCAN BULKLEY, New York City

Senior Physician to the New York Skin and Cancer Hospital, Member of the American Association for Cancer Research, Etc.

[Concluded from July issue, p. 483.]

What Can Be Accomplished

Turning from this discouraging side of the cancer problem, we will consider what can be accomplished in primary cases by intelligent, faithful, and prolonged treatment along medicinal lines. Unfortunately, the actual number of satisfactory cases to be reported is not as great as could be desired, as it has been found impossible to trace many patients who have come from all parts of the country, many follow-up letters being returned by the Post Office, as "unknown", or "removed" and in many cases no response came, even when doctors, families, or relatives were addressed. However, on carefully studying the recorded histories, there were found a relatively large number of patients observed, 5, 10, 16, 18, and even up to 28 years after being first seen and remaining entirely well. The latter, the most striking case, may be mentioned first. This case was reported in my last book, as having been carefully watched for over 16 years, and that when examined thoroughly at the last visit, the breast was absolutely normal. Recently, I got trace of the patient, 12 years later. She was well, at the age of 73, having remained well 28 years after her first visit. The case is as follows:

Case 16.-Miss B. M. L., aged 45, was sent to me January 4, 1894, with a well defined carcinoma of the left breast, so diagnosed by several good medical men, one of them a surgeon of prominence who urged an immediate operation which was to have been performed on the day following that when she came to me. The mass had been noticed a month or so and had steadily enlarged and begun to ulcerate; it was associated with slight axillary adenopathy. When first seen, there was a hard mass, nearly 2 inches in diameter, in the upper outer quadrant, well defined. While it was not painful on moderate handling, she experienced pain in it, subsequently. There was some adherence to the skin which was slightly ulcerated near the center of the mass.

The patient was placed on full dietary and medicinal treatment. Two months later, the lump was recorded as less distinct and flatter, and, within eleven months, it had entirely disappeared. A month or two later, she had

some pain in the breast with the menstrual disturbance connected with the menopause, but careful examination revealed no trace of the tumor. On November 8, 1905, she called, bringing a relative for treatment, and careful examination showed the breast perfectly normal. Again five years later, she called, with another trouble, and the breast was found to have remained perfectly well, sixteen years after first coming for treatment. Then I reported the case. Lately, she sent me another breast case, and I learned her address and visited her in December, 1922. She was in good health, and the breast was found to be normal. She is now 73 years of age and it is almost 29 years since she first came under my care, and avoided the surgical operation which had been urged, and which was prepared for the next day.

Case 17.-Mrs. H. R., aged 30, had been under my care for acne, off and on for some time, when, on October 26, 1904, she called my attention to a characteristic lump about 1 inch in diameter, just below the nipple of the right breast, for which she had consulted her family physician, as she had felt pain in it since July. She was a nervous, excitable woman, under great strain, eating freely and indulging in a good deal of alcoholics. Not being willing to have the operation advised, she consulted me and was placed on a strict diet and thorough medicinal treatment. On January 6, 1905, it was recorded that the breast was normal, with no trace of the lump, and with absolutely no pain. For several months thereafter, it was constantly recorded that the breast remained normal.

About 4 years after the disappearance of the tumor in the right breast, when she had neglected treatment for some time and had lived pretty high, using liquor freely, a tumor developed in the left breast, with more or less pain. Under careful dietetic and medicinal treatment, this subsided and within a few months both breasts were normal. She was a very difficult patient to manage, with a systolic blood pressure of from 200 to 250, diastolic 110 to 130. She had never been pregnant and her menses continued until after her 47th year of age. Seen quite recently, the breasts remained normal, 18 years after her first visit. Experience teaches what would have been the

result had the right breast been removed surgically, as advised, at that time.

Case 18.-Miss J. M. A., aged 45, a hard working city missionary, under great mental and physical strain, was referred to me October 12, 1905, for a tumor in the left breast, above the nipple, which had existed for some months, awaking her at night with pain, and also annoying her with numb, shooting pain in the day time. She had seen many medical men and surgeons, all diagnosing cancer, but had declined the operation constantly urged. Under rigid dietetic and medicinal treatment, the pain had entirely ceased, within two months, and there was very little of the trouble left in the breast. On January 5, 1905, it was recorded that both breasts were the same, with no trace of the former tumor in the left breast. She was repeatedly seen for nine years, always in active work, and recently was seen again, in perfect health and rather stout, with absolutely no remains of the tumor, fully 17 years after her first visit.

Case 19.-Mrs. B. E. C., aged 44, was first seen on account of trouble in the right breast, on September 19, 1892. She then had a hard, flat tumor in the outer lower segment, 11/2 inches in diameter, rather sharply defined, and tender on pressure at the sides. This she had noticed about two months. Not satisfied with my diagnosis of cancer and hesitating at the thought of prolonged medicinal treatment, she consulted a well known, prominent surgeon, who pronounced the tumor unquestionably as cancer and urged its instant removal. This I did not know until she informed me of it, some time later, after the tumor had entirely disappeared under treatment. I saw her at frequent intervals for six months, and the breast became entirely normal. Four years later, she was seen again, in regard to the menopause, which she was undergoing, and the breast was found still to be normal. She was yet maintaining her diet. Nearly three years later, I learned from her husband that she was in perfect health, with absolutely no breast trouble, and for eight years later, while he himself was under occasional treatment, I learned repeatedly that she remained perfectly well. Thus, she continued entirely free from cancer for over 16 years after beginning treatment, with no recurrence of the breast tumor. The couple lived in a neighboring town in New Jersey, and, if there had been any recurrence, I should certainly have known of it, as her husband was a distant relative and overjoyed at her escape from the knife.

Case 20.-Miss G. M., aged 44, a hard-

worked public-school teacher, came to me November 13, 1905. She had struck the breast in a fall sixteen years before, but the effects had passed off, and there were no sensations for 7 or 8 years, when she began to have pain aggravated at menstruation. During the past year, there was a lump formed, with constant pain; also more recently pain was felt in the axilla, which kept her from school. A number of medical men had always diagnosed cancer, and a surgeon of prominence in one of the large hospitals had strongly pressed for immediate operation.

When first seen, there was a tumor 2 or 3 inches in diameter, sharply defined and nodular on the surface, in the upper segment of the left breast, with enlarged glands in the axilla. She had long been constipated and passed only about 60 percent of the amount of urinary solids proper for her weight and age. Under very active treatment, it was recorded, four weeks later, that there had been hardly any sensation in the breast during the previous week, whereas for the last months she had been kept from her work in school by the severe pain in the breast and in the axilla. The tumor had already diminished materially in size; it was only moderately hard. The patient was out of doors every day and was feeling much better. One month later, it was recorded that the breast was very well and on examination was found to be almost the same as the other, there being some general caking in both. She had had no pain for some time. One month or so later, she was again at her duties as a public-school teacher, which she has continued since, with rare exceptions when some temporary ailment prevented. The lump in the breast did not wholly disappear for a month or two later, but, on April 7, it was found that the left breast was the same as the other and that no glands could be felt in the axilla.

From that time to the present, this lady has had a variety of troubles, rheumatic and others, and it has been difficult to keep up a correct action of the bowels and kidneys. But, in spite of strenuous and often exhausting work as a New York City public-school teacher, she had had no return of the breast trouble up to the time of my first report of the case, in 1915, that is, over 9 years. A sister, aged 60, had then just died, with cancer of the stomach, in a distant country town. It is now over 7 years since then and from friends I learn that the patient remains entirely well and free from cancer. This is over 16 years from the date of her first visit.

Case 21.—Mrs. J. T. T., a farmer's wife, aged 38, was seen in Norfolk, Conn., on August 11, 1914. She had been confined with her first child four months previously, but had not nursed the child and had had no trouble with the breast. Four weeks before her visit, she had noticed a tumor in the upper, outer segment of the left breast, which was increasing steadily, attended with considerable pain. She had seen an excellent surgeon in a neighboring city, who diagnosed cancer and urged instant operation.

When first seen, there was a mass the size of an egg, hard and well defined, tender on pressure and with enlarged axillary glands. Under very active dietetic and medicinal treatment, including thyroid substance, and iron, and 50 percent ichthyol locally, with Hebra's diachylon ointment later, the lump disappeared slowly. Just one year subsequently, it was recorded that the breast was perfectly normal, with no trace of the tumor or of axillary adenopathy. The patient was again confined of a healthy child, in June, 1916, and the surgeon, who had made the original diagnosis of cancer and urged immediate surgical removal, reported the breast as perfectly normal. Seen very recently, this past summer, it was found that she remains perfectly well and free from cancer, 8 years after her first visit to me.

Case 22.—Mrs. S. J., aged 33, first noticed a lump in the right breast, two months prior to her first visit, at my hospital medical clinic for cancer, February 28, 1917. This lump had steadily increased in size until seen, when it was fully 1½ inches in either direction, in about the middle line above the nipple, with sharp, rather hard edges, and a palpable gland in the axilla. The patient had been having sharp pains radiating from the breast to the axilla. For future reference, I called in the surgeon in attendance, who at once recognized it as carcinoma and urged immediate removal as the only hope for the patient.

The lady was extremely constipated, the mouth dry and the saliva acid. Being placed on strict dietetic and medicinal measures, it was recorded in two weeks that she felt better than she had done for a year. The lump was materially smaller, though the edges were still sharp and nodular. There was no pain except on extreme exertion in doing her own housework and caring for two small children who always accompanied her. She was very faithful to treatment, usually coming every week. Six months later, it was recorded that the mass had markedly diminished, it being about 1 inch in diameter, very shallow, and

with absolutely no pain. Six months later, practically nothing could be felt, not even adenopathy.

A little over a year after her first visit, a physician visiting my clinic was told that this patient had cancer, and he was asked to tell which breast had been affected. After careful examination, he decided that it must have the *left* breast (instead of the right), as there was slight chronic mastitis there. At intervals, later, four other physicians and surgeons made the same mistake in diagnosis.

One of my assistants reported to me a similar case, where the cancerous mass had disappeared under the same treatment and, after a year, a doctor had made a similar mistake after examining both breasts. Within the first year, she had been again pregnant, the child dying soon after birth. She reported for observation and for some treatments for four years. Nothing could be found in either breast, at any time, nor any adenopathy. It is now nearly six years since her first visit, and she has given birth to still another, living, child.

Prolonged Treatment Needed

It is unnecessary to go into much more detail regarding the very many other cases of breast cancer that have passed under my observation and yielded more or less faithful obedience to all the details of treatment. As already stated, it is very difficult to secure loval fulfillment of all the necessary and often tedious particulars of treatment for a time sufficiently prolonged to secure the desired result. With the general prevailing view of the hopelessness of cancer, and the opinion, still being taught, and accepted by the laity, that cancer is a local disease and that surgical removal offers the only hope, many patients, after a brief period of treatment, yield to the lure of the spectacular features of surgery, x-rays or radium, even with the possible expectation of recurrence, and are lost sight of, often after one, two, or a few visits. Of our patients, there were 151 who were seen but once, 16 twice, and 13 three or four times, when they ceased coming. There were 173 who were under treatment for one month or less; 12, two months; 4, three months; and 26 for less than a year. On the other hand, 17 have been faithful for 18 months, 19 for 2 years. As already indicated, a very considerable number of those who have remained until discharged were cured, and some of these return at specified intervals, for inspection, even for many years.

As to Recurrence

Cancer is such an insidious disease that,

while surgeons formerly considered freedom from recurrence for three years after operation a cure, this period was lengthened to five years. Now, those who are honest will not set any time, but rather look for recurrence, which is often seen ten, fifteen, twenty-five, or even more years thereafter, as many of us can testify. When, however, the most careful, systemic treatment of carcinosis has been carried out conscientiously for some years, recurrence does not happen and is hardly possible, inasmuch as the cause which produced the first tumor has been overcome. When, however, care is relaxed and the bad habits of living are returned to, as in Case 17, the disease reappears (in this instance in the other breast), soon to yield again to exactly the proper treatment.

This, though, is quite a different story from what happens after surgery, when the patient is simply watched for the return of the trouble, without any intelligent effort being made to overcome the pernicious condition of the system which originated the trouble. For, true cancer is never, even at the first, a wholly local disease, although local irritation may cause its lesion to appear first in some particular place. In the same manner, gout is rightly regarded as a systemic disease, although its first manifestation may occur when the great toe is stepped on. Also, while syphilis is a constitutional disease, its late lesions, or gummata, often arise at the site of an injury. Consequently, it is unreasonable to assert that the removal, by the knife, x-ray or radium, of the primary lesion will cure the disease. All of us have seen plenty of cases of breast cancer where the mass was excised immediately after its discovery and where yet there was recurrence or fresh development of the disease after a longer or shorter period of time.

A single interesting case or two, still under observation and treatment, may aid to a clearer understanding of the subject, although very many more could be given.

Case 23.—Advanced primary cancer of the breast. Miss B. C. M., aged 52, a hard working and ambitious school teacher, came to my office, September 14, 1920. Three years before, a small lump had appeared in the upper, outer segment of the right breast, which had been treated for two years by an osteopath. A year before coming, it had opened spontaneously and a surgeon wished to remove the breast, which was declined. Since then, the mass had increased, with active and deep ulceration, which has been treated with disinfectants but with no other measures.

When first seen, the whole breast was firm and immovable, presenting a deep, ulcerating area of about 2 by 3 inches, with hard, characteristic edges and profuse, offensive discharge. There were several enlarged axillary glands, somewhat movable. The patient could bear no ordinary clothing but came with a loose wrap over the affected breast. She was depressed and anxious, although hopeful and confident that proper systemic treatment would overcome the trouble, which is half the battle in handling these cancer cases. She was still of good color and weighed more than was called for by her height and age; namely, 160 pounds, which was reduced by treatment to 144 pounds when seen February 5th.

The lady had always been constipated and had piles and an anal fissure. The saliva was very acid. Sleep much disturbed by the great pain in the breast. Being placed on very strict diet, and thorough internal and external medicinal treatment, the patient experienced a change in only 2 weeks that was remarkable. She slept perfectly, with no pain (no opiate was given); the breast appeared better and the discharge lessened; soon after this, the hardened edges flattened down, with signs of cicatrization here and there. Small doses of thyroid were then given after eating, but this soon disagreed with her and was changed to a capsule of apiol, 5 grains after eating and at bedtime. From time to time, various remedies were required to meet digestive, rheumatic, nervous, and other symptoms.

This lady has now been under persistent and faithful medicinal treatment, over two years and a quarter, and the change in her whole condition from first to last has been most remarkable in comparison with the previous and usual progress in such cases. Under ordinary circumstances, she would undoubtedly have been in her grave a year or more ago, while the misery and suffering involved would have been indescribable. Her lesion was considered inoperable by an intelligent surgeon when first seen.

The disease still exists in the breast, but is hardly a shadow of that when first seen, and it will require some months yet of diligent treatment to procure a perfect result. The patient has been good enough to present herself twice, at the weekly conference in the Memorial Hospital, in May, 1921 with a great ulcerating mass, and in December, with the mass much shrunken, the ulceration diminished by one-third, and signs of epithelial healthy growth in many places. At this second visit, I said that I expected to present her again

in a year with the lesion healed. This visit has not yet been accomplished, as she is lame and lives a long distance from the hospital, and the weather is bad. When I called on her very recently, January 24, she said, "Why did you not wait a week longer, until all was perfectly healed over?"

During all this time, from first to last, there has been a steady gain week by week; she has been cheerful and happy, going out as she pleased, and traveling to Florida for some weeks, and one can hardly believe that it is the same person who, on September 24, 1920, first came, a perfect wreck, who would not be given six months to live. She has not had a particle of pain, never requiring an opiate or sedative from the first, and, as the sister remarks, "wants to do too much." It is well indeed that she has had such fortitude and patience and perfect obedience in following out all the necessary details of treatment. She has used many, many pounds of calamine and zinc ointment and, no doubt, even gallons of internal remedies of one kind or other.

When seen recently, the whole remains of the breast were soft, and quite flat, with no ulceration but some little redness and two glazed places. But, over a considerable portion of the original ulcerated surface, the skin was almost normal, and the nipple, which was formerly retracted, was protuberant, though not quite as much as the other one. The whole change, in this almost two and one-half years, is certainly remarkable, and shows conclusively that carcinosis can be checked and that the mutinous cells can be dispersed by thorough and complete dietetic, hygienic, and medicinal treatment, even in a totally inoperable case.

One more, recent, case may be added to show what one continually sees in following out most carefully this line of treatment.

Case 24.—Large primary cancer of the breast, with rapid disappearance. Mrs. M. B. R., aged 46, a hard-working public-school teacher, a lady of great culture, came to me on March 22, 1921, weighing 110 pounds, while her height and age called for 147 pounds. She had never borne children, being only very recently married. About February 8, while bathing, she noticed a small lump in the lower middle segment of the left breast, which had persisted, continually enlarging until the time of her visit. There was then a mass the size of half a lemon, hard and nodular, with some pain during the past week. But no axillary glands could be discovered,

although there must have been some deep lymphatic permeation, judging from the time which had elapsed. The bowels were constipated, the tongue was tolerably clean and the saliva moderately acid. She was placed on the usual mixture of acetate of potassium, nux vomica, cascara, and rumex, with capsules of 2 grains of thyroid extract after each meal, and the "green-card diet."

Eleven days later, it was recorded that the mass was smaller and softer (which she herself had noted) and the pain had left. A month later, there was still great improvement in the breast, and the lump was not one-half the size of what it was when first seen, although still sharply defined. On July 18, it was noted that the mass had decidedly lessened, seeming hardly one quarter the original size, flattened, and loosely movable.

The patient's weight ran down, under treatment, to 1031/2 pounds during the very hot summer, and the thyroid was stopped, warm milk being given pure and alone, one hour before the evening meal, with half an hour rest after, and a pill of iron and quinine citrate after each meal. On September 26, it was found that there was "no trace of the mass in the breast, and no enlarged glands in the axilla or axillary fold," and she weighed 1101/2 pounds. On June 7, she wrote from her home in the country that she was "very well, gaining weight, and felt better than ever at the close of school." She was warned not to neglect diet or remedies, and to call soon. I did not see her until July 27, when she felt very well, weighing 1201/2, the most for four or five years. Both breasts were absolutely normal. On January 26, 1922, it is noted that no trace of the tumor could be found in the breast, nor were any enlarged glands discernible. On April 8, she weighed 1171/2 pounds, although she had just passed through an attack of grip, and both breasts were found absolutely normal. She still comes from a town in New Jersey every two or three months for observation and, when last seen, on December 21, she was the picture of health, weighing 1261/2 pounds, though working hard in school during all the treatment. There was not the slightest sign or even thought of her former threatening breast trouble.

Space does not permit of a further elaboration of the subject, but many more cases could be cited which had been doing well two, three, five, and more years, in which the cancer could be spoken of as really cured, with absolutely no expectation of a recurrence, providing the patient lives in such a manner that there shall be no more mutiny of the body cells. All this may seem very optimistic, but I have always been an optimist in medicine, believing that for everything there is a cause, and that, while there is life, there is hope. That the cause of cancer has not been determined earlier, is a sad reflection on medical genius; but it is partly explained by the fact that it has been sought for mainly by experimentation in the laboratory on lower animals, and with the test tube and microscope, and not enough in human beings, at the bedside, and through examination of the body chemistry.

In Memory of Dr. Robert Gray

"The first English-speaking practitioner who ever used the active principles of the Galenic substances."

By J. M. FRENCH, Milford, Mass.

THE great heart of Robert Gray is at rest. After nearly ninety-three years of tircless effort for suffering humanity, this remarkable man has passed from our ken.

We know little of the manner of his going, and nothing definite as to the vicissitudes through which he must have passed in his last days. The little information which the writer has been able to obtain came through the postmaster of Pichucalco, Chiapas, Mexico, of which city Dr. Gray had been a resident since a short time after the close of our Civil War, in 1865.

He stated briefly that Señor Gray died on the 12th of August, 1922, in the village of Juarez, a section of Pichucalco, in which he had been living for some time; and that, according to the data handed in, the cause of his death was exhaustion of vitality due to old age. He added that Dr. Gray had many good friends in the vicinity, from whom he received well-merited honors on the occasion when his body was deposited in its last resting-place in the cemetery at Juarez. With these brief facts, we must be content.

A Pathetic Figure

Robert Gray's childhood was bright and happy, and his young manhood stirring and eventful; but the years of his maturity and old age must have been filled with indescribable loneliness and sadness, as the result of his voluntary exile from his native land in uncongenial surroundings. Yet, even these were brightened by his cheerful acceptance of the hard conditions of life for himself, and his unremitting efforts to better the conditions of those around him, Shut out from all personal intercourse with his equals, and with only his pen and typewriter to put him in touch with his kind, few men have ever illustrated better than he, the truth of the words of the poet,

"My mind to me a kingdom is."

It is doubtful if any of the present readers of CLINICAL MEDICINE ever met Dr. Gray. Yet, if we may judge by the general interest which has always been shown in his writings, there must be many among us who had come to admire his virile personality, and some who had learned to look upon him as a valued friend. Certainly, this was the case with the writer, to whom the brief notice of his death, contained in the "CLINIC" issue of last November, brought a sharp sense of personal loss. I had come to know him first through his writings in a wide circle of medical journals, and later by a personal correspondence with him covering a considerable number of years, in which had been revealed to me something of the heart of the man, which had endeared him to me beyond the common passer-by.

Ancestry and Childhood

When it comes to setting down the outlines or his life, we find that much of our knowledge of him is indefinite and that many of the things, which are usually looked upon as essential in a biography, are lacking in his case. As an illustration of this, take his own statement: "Long years ago, I knew something of the genealogy of my family for some five or six centuries back, including the lapse of time since the age of blending with the Jamestown settlement; but, now, I can recall nothing sufficiently positive to place into a living page, more than that the mother of my race and line was bought with 500 pounds of tobacco at Jamestown, and that our men lived out their century, save when violence or accident intervened." But, in a letter written to me a few years earlier, he gave it as his great grandfather who was bought at Jamestown, and the price as 300 pounds of tobacco. Obviously, these discrepancies are not due to any intent to mislead but only to a loss of the vivid memory of youth, in the course of the long years of an active life. In no case do they affect the essentials of the narrative.

What we know, then, as to his ancestry, is, that he was of English descent and that his first ancestors in this country came with the early settlers of Jamestown. He was born on the 31st day of October, 1829. I cannot find the locality of his birth anywhere definitely given, but it was somewhere in the region about New Orleans and, therefore, probably in Louisiana.

In a letter written to me, in 1909, he describes himself as follows: "I am six feet tall, well-proportioned, athletic, physiognomy not unlike that of the Lees of Virginia, of ante-bellum birth. I am quick, impatient, sensitive for cause, yet always of apparently cheerful mood, this more intensely when really most contrary to such sentiments; masking under a placid exterior the rankling hell within that at times wields a presumptuous sway."

In the same letter, he thus responds to my request for his photograph: "Photo an impossibility, not having had one taken in fifty years; nearest photographer sixty miles distant, belly-deep in mud all the way. CLINICAL MEDICINE requested, for January; I could not comply. My photo at this moment, three months absent from barber, covered from head to foot with mud, might be serviceable to frighten away rats and crows, but certainly improper to adorn an up-to-date office."

However, in a letter written some three years later, he says: "One thing I am able to tell you that complies with old requests of yours. The photographic agony was passed through in September, and has been reproduced for CLINICAL MEDICINE, and will probably reach the light of day in the December or January number. The paper that will be printed with them will tell you enough of what I have been doing the past year to show you a vital feature of prophylactic influence that tells more for health than a thousand rusty homilies ever taught."

I trust that these photographs—the only ones in existence, so far as I know—will be hunted up by the editor, and made to do service in connection with this paper, imparting a realism to my story which nothing else can do. (See Frontispiece.—En.)

Gray's family were extensive land and slave owners, some of them large distillers of apple and peach spirits and manufacturers of plug and smoking tobacco. His father was evidently a man of good ability and strong character, the manager of a large plantation, and successful in business. His surroundings were therefore those of abundance and almost of luxury for those days and in that new country,

He speaks affectionately of a cousin of his father, who was educated in Paris, had been a nun for 15 years, studied medicine in the convent, and made her home with his father. She taught him to read and exercised a great influence over his life in its formative period. Another relative who had much to do with the moulding of his character was a wealthy bachelor uncle, his mother's brother, ever at open rupture with the church, but who contributed to his early mental development by supplying him with a class of literature not permitted in his family and interdicted by the church.

Plans for Education

It was his father's plan that he, the only son, should inherit the property and carry on the work of the family. To this end, he arranged that Robert should first fit himself thoroughly for the work of a physician, and should then establish a large plantation, of which he should be the proprietor, manager, and physician. Robert had no interest in this plan, desiring rather to enter West Point and fit himself for a military career. However, he yielded to his father's will and accepted the path that was marked out for him, realizing that the way would be made easy for him. "I presume," he says, "that scarcely one in a hundred had the favorable start that was mine, with no check or setback anywhere. Credit for having battled successfully against direful opposing difficulties I cannot claim; because I know not the practical definition of such a combat, save as I was forced into a profession contrary to my predilection; in which I had sufficient common sense to acquiesce and make the best of what I could not honorably escape."

He does not anywhere set himself up as a paragon of perfection. "In my long career of intense vicissitudes," he says, "I have been absolutely true to no more than three principles: 'the preservation of my health; the Confederate cause; and my professional obligations, in all the bearings of their multiple relations."

His elementary education was begun, and apparently largely carried on, in his own home. He speaks of his French tutors and of his studies in English, Latin, and French. He was an inveterate reader and gained his education largely from the various libraries that were at his command. He was evidently a brilliant student, keen to observe, quick to

understand, and of good judgment. So, he was soon ready for Paris.

But, why Paris? This is a question I have often asked myself, but for which I have never found a satisfactory answer. He was of English ancestry. Why was he not sent to London? His cousin had been educated in Paris, and all his inclinations and associations throughout his life seem to have been with France rather than England. On this fact, all his future career appears to have depended.

So it came about that, in due time, he set out for Paris, bearing letters to some of the most noted physicians and medical teachers of this great medical center. Whatever may have been the contents of these letters, those who received them gave the bearer a cordial welcome and devoted themselves assiduously to the work of directing his activities in the wisest channels. Instead of taking the usual course in one of the best medical colleges, his friends advised private instruction, with constant attendance at the best lectures, clinics, and courses of hospital instruction and observation, all of which combined to give him a far more intimate and elaborate insight into the nature and treatment of all classes of disease than he could have obtained in any other way. At the end of four years, he was not only able to pass the most rigid examination and secure a high-class diploma, but he had an unusual amount of practical experience, both medical and surgical,

Two things seem to have been especially impressed upon him during these four years of study. The first was, the supreme importance of surgery which greatly appealed to him as the one dependable means of getting results. The other was, the comparative impotence of therapeutics, as judged by the standard treatment of the day. Even the best of the Galenic remedies did not impress him as of much value. It was the time and place of therapeutic nihilism, and young Doctor Gray absorbed the doctrine to its limit.

Paris having done its work for him, he turned his back upon it; and he never saw it again. Returning to New Orleans, he spent a year or more in that gay city, gaining a varied experience, valuable and otherwise. Then he went back to his old home and, in obedience to his father's wish, began the unwelcome task of building a plantation in the wilderness, with hired slaves and their overseers as his workmen. He did not believe in slavery. As he said, "From my childhood, I had felt some vague repugnance to slavery, especially the flogging feature. I sternly pro-

hibited this on my works, even among the slaves of the contractors. But, I had been born and nurtured in the hotbed of slavery; and I was southern, right or wrong, to the marrow of my bones."

For six long years, he continued working at his unwelcome task, until its completion was in sight. Plans were shaping themselves in his mind for a home of his own, with his loved one beside him.

Then Came War

Then, all unexpectedly, on a November morning in 1860, as he opened his mail, which came but seldom, his eyes were blinded by the staring headlines, as he read the startling news that came to him as "the harbinger of the blackest, most portentous cloud of war that ever darkled over cultured intellect and refined civilization." This could have been nothing less than the news of the election of Lincoln as President; and well he knew its portent.

Instantly he stopped the work that was so near its completion, dismissed the carpenters, sent home the slaves and their overseers, "and never more saw that haunted purgatory wherein I had passed six fearfully expiating years. How strange it seems to me tonight that men could deliberate in cold blood, with tranquil nerves, on the perpetration of that ghastly fratricide. I participated in such deliberations, with undemonstrative acquiescence, with the sentiments of a polished bosom suppressed, my personal destiny being indifferently thrown into the seething vortex of my fair native land. And, tonight, I regard all that direful scourge as the legitimate fruit of the curse of slavery having been barnacled on to the constitution of American Independence."

He returned to his home, his family, and his plighted Carrie, without warning. No one questioned why he had come. They knew he must come. His father had already raised and organized a company of cavalry, and now urged his son to raise a regiment and take it to the front.

"I told my father that West Point, which he had refused me, would have made such destiny my proper ambition; but that Paris had taught me far different lessons; that any drop of blood shed by me in that miserable brother-murdering would be spilt in trying to save life, by treating the wounded in the best possible manner; that my part with the murderous crew was not, to shed blood. And I remained inflexible to the last day of that savage butchery."

To his promised bride, he explained that

he was not going into the armed service, but would be a volunteer first-aid surgeon in the rear shadow of the firing line; not enlisted in the Confederate service, nor on duty save in time of battle, or for such time as he might be useful to the wounded men who could not promptly be moved to distant hospitals; and she replied that she would spend her time and money in ministering to the wants of the families of the poor men who might be absent in the army.

In this way, he went through the four years of the War of the Rebellion, loyal to the South in every thought of his heart, yet knowing from the first that theirs was a lost cause. He did his duty faithfully as a surgeon, ministering to the sick and wounded of both armies impartially, as occasion demanded. Not only was he never in the pay of the Confederate government, but he paid his own expenses and, in addition, sent to Paris and secured the services of one of his most intimate friends and old-time comrades in the medical school there, to come with him and act as his assistant.

In all his story, he has no words of bitterness for the Northern soldiers or the Northern people. Twice he was wounded, the last time being incapacitated for several months. At his first knowledge of Lee's surrender, he realized that there was nothing more to be done. Having already released his friend and assistant, he now gave up the unequal strife as hopeless and set out for home. The result I quote from a personal letter.

"My own life was destroyed and entombed in the grave of the Lost Cause. When all was over, I returned to the old homestead. The last of my father's family reposed in the silent churchyard. The blackened chimneys alone remained, attesting the hell of war that had raged over the scenes of my tender years. Not fowl, nor animal, nor slave, nor fence-rail was anywhere visible; while she, the beloved and only remaining hope, was where the sods of the valley were not dry over her lonely bed—the only girl that ever held the chamber of my heart all her own, the loved and the lost."

Turning from this mournful scene, he hastened to execute a quit-claim deed to the vast landed estates that were then his alone, for a few hundred dollars, and set out on his journey southward, which was ended only when he had arrived in the most unhealthy belt of the American continent, the Gulf coast of southern Mexico, where yellow fever was indigenous, and where he felt that his services

would be more needed than anywhere else, and also where the end of his own career could not be long delayed.

"And from that day to this," he concludes, "I have been exposed to deadly contagious discases, with no personal object or desire to live, yet never once sick or in physical pain, living a dreamy, enchanted life, the sleepless slave of medical science and suffering humanity."

Therapeutic Difficulties

When Dr. Gray left the schools of Paris, he was a full-fledged medical nihilist. To him, surgery was the real thing, while therapeutics was but a makeshift. His six years of plantation-building but strengthened him in this attitude. When he struck the hot belt around Vera Cruz, new lessons tending in the same direction awaited him. found a virulent epidemic of yellow fever rapidly decimating the rural districts. far as he could judge, no medicinal treatment made much difference with the result. A very large proportion of the sick ones died. Without a knowledge of even the elements of the treatment of this dread disease, but with the confidence born of ignorance, he threw himself into the breach and set himself to produce results.

But, though he made the most of the methods and remedies which had been taught him in the schools, it was all to little avail. "As Sangrado told Gil Blas," he writes, "most of my patients died." But, so did the patients of the other doctors about him. One lesson he learned from an old Frenchman who, though half drunk most of the time, counseled him against the use of intoxicants in this disease—advice which proved good and was always followed.

Nor was his confidence in the efficacy of medicinal treatment increased by a comparison of the mortality in two adjacent fields, similarly situated and containing about the same number of inhabitants. In one of these, no medical man was employed from first to last, and 31 persons died. In the other, nearly all had more or less medical attention, and 71 died.

Moreover, his own success in treating his patients was no better than the average, though he had been taught by the best men in Paris. With the other prevalent diseases, such as malaria, pernicious fever, and cholera, the results were not much different. One fundamental lesson he soon learned: that the chief causes of all these diseases were heat, filth, and ignorance—all hard to overcome.

In the case of smallpox, he was somewhat better prepared than his neighbors, since he was well versed in the lore of vaccination and fully prepared to carry it out; which he did with results that were very satisfactory when compared with those of others. But, in the actual treatment, little could be accomplished

by any means at his command.

Meantime, he kept in correspondence with his old Paris classmate and Civil-War assistant through whom he was informed to some extent of the progress of events in Europe and the world at large. From this comrade, he received the assurance that he was master of the best in the medical line, and had the most approved medicines known to science sent direct from Paris. Accepting these statements as facts, he counted surgery and vaccination as his only strongholds as a physician, with therapeutics as a poor third, and no light showing for the future. Obstetrics in that country was in charge of the midwife, except in cases needing surgery.

A Ray of Light

Then, all at once, out of darkness came a light. "The first glint of Dr. Kane's midnight sun," he writes, "did not flash a ray of more dazzling light into polar darkness, than that which burst upon my benighted mind, late in the year 1872, when the propaganda literature of Chanteaud and Burggraeve, of Paris, together with a supply of their dosimetric tablets and granules of the Galenic substances, reached me in the somber sequestration of the torrid wilds of Mexico. And that precious contribution of my war-comrade was supported by the hearty endorsement of the brightest clinical scientists of Paris, who had proved out these new remedies to a finish, and cried, 'Eureka!' And, in the same mail, there came a letter from the venerable Doctor Hippolite Hérard, in which he assured me that my long-deplored want had now at last been supplied by Dr. Adolph Burggraeve, professor in the University of Ghent-the Christ of Medicine."

This discovery of the tools and methods of Dosimetry, or, as we know it today, Alkaloidal Therapeutics, or Active-Principle Medication, marked the turning point in his professional life. He declares that this was the birth and baptism of his legitimate clinical career, endowing him with the ability to save desperately sick patients from whom the white-winged dove of Hope had fled. And, here, he makes this notable statement, the probabilities of which are corroborated by the facts of history:

"At this point, I venture to make the statement that I have positive certainty that I was the first English-speaking practitioner who ever used the active principles of Galenic substances; for, my supply was purchased from the first batch ever prepared for the medical profession in the laboratory of the famous French chemist, Charles Chanteaud."

Confident Therapy

From this time, he tells us, he began to live a new life, a life absolutely devoted to the sick members of suffering humankind in the tropical lagoons and jungles. longer sought perilous practice in order to shorten his days, having become convinced that he was immune to any infection; neither did he shirk the most dangerous work that offered itself in all his field. He guarded his health with zealous care by living according to Nature's laws. He buried his old past and began a new future, filled with confidence in his ability to do great things for his sick people and with a strong desire to serve. These two ideas seem to have dominated all the rest of his life, and to have contributed to his own health and happiness as well as to the welfare of his patients.

As he grew in experience with and confidence in the improved system of medication, his mind began to reach out beyond the bounds of his daily practice and to take an interest in its progress in other parts of the world. He had taken no American journals; for, as he frankly says, he did not know of any which he thought would be likely to be useful to him. The most of his friends were in France. His reading matter and his medicines came from France. But, he did not often write for the French journals, "knowing that the elegant practice of France and Belgium could not be greatly interested in the backwoods practice of Mexico."

Now, however, he began to send to the United States for one and another of our medical journals, and he was somewhat surprised to learn that Dosimetry was bitterly opposed by the great lights of the medical profession in America-a course very unlike that pursued in France, where the great bulk of the physicians received it with enthusiasm. So, he resolved to take a hand in the discussion, and began to write short contributions for one and another of the American journals, in which he gave brief hints of the valuable services he had received from certain French preparations probably unknown to either his readers or the editors who printed his letters.

These naturally excited much curiosity and

brought him many letters from the readers, asking for further information. For these inquiries, he had already prepared printed replies, giving the outlines of the new system of medication, which he sent direct to the individual inquirers, knowing that the editors would at that time on no account have printed a word in relation to the same. His answers also advised the writers where they could find fuller instruction in English and where to secure the remedies advised. Finally, so much interest was aroused in the profession generally, that the editors who, before, would have refused his contributions, now began to ask him to write something for their journals -which he willingly did. And, so, he carried the war into the enemy's camp.

It was not until after the ALKALOIDAL CLINIC had been established a number of years, that Dr. Abbott, having learned of Dr. Gray and his work, wrote to him, endeavoring to interest him and sending with his letters a full line of the alkaloids as prepared by him. Finding these fully up to the standard of those made by Chantcaud and much lower in price, Dr. Gray now began their use, and soon he became a frequent and valued contributor to the CLINIC and its successor, CLINICAL MEDICINE.

So great was the interest manifested, not only in the medical facts related by him, but in Dr. Gray as a man, and in his unusual experiences, that, at the urgent request of the readers and editors, he consented to write a series of autobiographical articles, which finally extended through the issues of several years, and from which the facts set forth in this paper were very largely obtained.

He also wrote for a considerable number of other American and for several European journals. In this way, he made many new friends and was made to feel that he had once more a part in the life of the world. Through the American journals, he also renewed his acquaintance with some of the friends of his earlier years. Of these, he speaks particularly of Lawrence, the editor of the Medical Brief, Ben Brodnax of Louisiana, and Wm. H. Burgess of Tennessee. All of these men were his comrades in the Confederate Army, and their names are also familiar to the earlier readers of CLINICAL MEDICINE.

As showing his vigorous and telling methods of spreading the propaganda for the alkaloids, the following, written in 1906, for the New England Alkaloidist, is a good example:

"I carry 156 active principles, weighing less

than five pounds with case, the equivalent of which in Galenic forms would load two mules. I am never ambushed by the enemy, when suddenly confronted by some desperate emergency, no matter what the disease or the complications may be. I have the antidote while time for medication yet remains, and do not have to send prescriptions to a distant drugstore for uncertain remedies—a makeshift often fatal to an imperiled life."

As to his opportunities for gaining skill by experience, he writes: "I have been situated more favorably for experimental practice than has usually been the lot of any other American. Alone, as I have been, in a vast field of big plantations, with numerous desperately sick peon patients, often in times of fearful epidemic crisis, I was able, after years of constant observation, to prognosticate when a patient had but a few hours of life without extraordinary energy of counteracting influence, which I did not vacillate an instant about calling into requisition, usually saving the situation."

The Man, Himself

And here he permits us a brief glimpse of his inner life:

"I do not believe that there lives or has ever lived another medical man as completely estranged from his kind, in family and social relations, as I have been for more than half a century. However, I do enjoy the volunteer friendship of some of the brightest scientific and medical minds in the United States or Europe, who write me letters that reconcile me to my solitary lot, and lighten labors that else might be irksome."

He did not claim to be deeply interested in the question of immortality in another world, but he had a very human interest in the immortality of his reputation in this world, as is shown by frequent passages like this: "And yet, there may be waiting for me a funeral, such as never before there was anything like in this weird, quaint hamlet, where the poor and the wretched have never called me in vain."

And we may rejoice in the apparent fulfilment of this anticipation on his part, as indicated in the letter from the postmaster of Pichucalco, from which I have quoted.

Into this brief summary is condensed the outline of a lifetime of such hardships and privations, such services and such rewards, such unsatisfied longings, and such reachings out of the unconquered soul, as it has fallen to the lot of but few men to experience.

Psychology and Daily Life

By MAXIMILIAN KERN, Chicago, Illinois

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THE application of psychological principles has been utilized by mankind long before the first inklings of the science were ever formulated. This is not particularly true of psychology alone. It holds for religion and the natural sciences as well. Man's first view of nature was essentially practical. Long before he ever understood the principles of gravitation, of mensuration, of metallurgy, he built his huts and shot his arrows. The various details upon which, later, the natural sciences were formulated were being gathered in these essentially personally practical ways for numberless centuries. The collection of these facts illustrates the greater part of man's evolution.

It was very much later in history that these various disparate individual experiences were generalized into principles and social science was formulated. This advance marks the rise into the modern era. Heretofore, experiences were individual, vital and demanded quick and personal application. Each individual was guided only by the lessons eked out of his own struggles with the environments. It marks a decided advance, therefore, when he has not only the details of his limited experience but the formulated experience of all mankind to guide his attack on the environment.

Man says, "I will not limit my observation to my immediate practical needs, I will take a broader view of experiences. I will find their controlling principles and will reserve the application of these principles for the future. In this way, I can learn more facts, draw bigger conclusions and so be in better condition to control nature."

So with chemistry and physics; so with psychology. The first view of nature in each one of these sciences was essentially practical. The stone was thrown and skillfully guided in its course without necessarily knowing the laws of potential kinetic energy. The cave man was controlled by shrewd observation of the inner workings of his mind on the part of his mate without knowledge of even the existence of a nervous system. This view contrasts the approach of physical sciences and of psychology. It leads to our definition of psychology.

Consider an hour of time. To the astronomer, it-represents one twenty-fourth of the period

of time consumed by the earth in rotating on its axis. It is an absolute and mathematically-precise period, uncontrolled and undismayed by human interference. To the individual, however, this same hour, spent witnessing an exciting football game, is a much shorter period of time than if spent under a gruelling cross examination in court, The difference is entirely a matter of viewpoint. The astronomer considers the hour without any relation to consciousness: In fact, he is not a good astronomer unless he is able to abstract entirely the personal element from his consideration. His view is objective. To the psychologist, the hour is regarded, not from the impersonal standpoint, but as a group of experiences of a conscious individual. The hour differs with consciousness. Your hour differs from mine, since it takes the coloring of your experience. The psychologist's view is subjective. We see, then, that, although psychology and the physical sciences are built on the same phenomena, objects of consciousness, they take diametrically opposed views of these objects. Both posit a conscious individual. Both study the objects of his consciousness. Both the physical sciences take an objective view of these objects of consciousness; psychology, a subjective view.

Psychology of Crime

So, let us proceed to elucidate the processes in the psychology of crime.

Let us for the present exclude all questions of mental disease (or the subject of those who are convicted of crime, who intentionally, basely deceive or lie), for, the witness who lies offers absolutely no interest or study to the psychologist, especially in his study of illusions or the detection of the cause of the crime. Thus, we are confronted with the question of unintentional mistakes of a sound mind, and, as psychologists, we must therefore ascertain immediately whether these mistakes are all of the same order—or whether we should label these mistakes as simple illusions of memory.

Memory to be made responsible, is but a matter of course; for, it is generally understood and taken for granted that all of us perceive our surroundings and the changes in our environment uniformly. If there are but twenty peas in a pod, no one will count them forty. If there were fifty children at a Sunday School class, no one could have counted or seen more or less. If a man be walking with a limp, no one could say that they saw him walk upright: If, however, there is a disagreement as to the validity or the truthfulness of the aforementioned statements, it is not due to perception. For, perception must have been, and always is correct. But, its later reproduction may be false; and, so, in all probabilities, it must be due to some defect or trick of memory.

The ability to perceive and to interpret one's perception varies as greatly in the individual as the differences of the temperature in traveling from pole to pole.

Do we really all perceive things surrounding us in our daily pursuits the same? Do these same things, perceived, define themselves or have the same meaning to us in our absorption of our environment? Are those who judge the doings of man sufficiently aware of how great and varied are the differences between men's perceptions? Do those that are called to judge and consider trouble themselves to thoroughly look into and examine the capacities and habits of the judged, as he moves through the sphere which he believes he observes? One can truthfully answer "no" to these questions. For, if we turn our attentions with the greatest effort to certain parts of a very complex impression, we may yet seek in our recollection, more certain about some parts of which we hardly took any notice than about those to which we devoted our whole attention. Thus, one sees how easy it is for the sound mind and body to err. Then, what other reason exists for the unhealthy or abnormal mind to attach itself to some unwholesome project, the usual outcome being a breach against society, which in itself is a crime, the variation from misdemeanor to actual homicide being only a question of magnitude?

Crime is thus an antisocial act. It is antisocial because it is first antiindividualistic as the part is before the whole; the attack being made upon the organism rather than the individual number.

So, one sees, crime is a psychological manifestation. All responsible action, being primarily postulated along the line of free will, functioned upon moral intentions.

Where freedom ceased, automatism usually makes its start. Beyond that point, one's conduct may be merely a menace, but it can never be a crime; it may be an event, but it

can in no sense be an act. It is thus one's conception between the abstract and the concrete, or that of right and wrong. Does wrong antedate right or vice yersa?

Right and Wrong

Right is an original moral concept of the whole being. The sense of wrong is simply its negation; but, there cannot be any negation without there being an affirmation. So, one readily sees that no notion of wrong can be predicated without there first being such a preexistent cause.

The very nature of the wrong presupposes an attack upon moral principle. This notion is usually coexistent with the moral ego, the prime principle of which is that of the right to be, and any trespass thereon originates the first wrong. The life of man is fettered at every turn by chains of custom, be it among the civilized or the barbarian, for the society even among the ferocious cannibals is far from being swayed by brute force; they all have their rules of what is right and what is wrong.

Custom is the forerunner of law. It must have had its beginning in choice or favor and this choice environed in conscience, or brought on the necessity, must have been swayed by that instinct of self preservation, which is the essence of morality, and thus conserves society in the individual.

Law, which is as variable as is man, receives its mutability from its interpretation at bottom; however, its cardinal principles ever remain the same.

Law regulates the criminal and crime; therefore, crime is but a violation of the law.

The distinction between crime and sin is one of modality rather than of essence. They are generally alike, objectively distinct, and under the challenge of the judicial attribute.

Crime is civil. Sin is personal. Crime is a challenge to the social order. Sin is a violation of the individual conscience. Thus we see in one merely an enlarged expression of the other. The first sin was against some form of deity; the first crime, however, that against the man himself.

Origin of Crime

When and how did crime originate? must now come to the reader's mind. It must have begun with the first inception of life upon this earth; and, if we believe in the theory of evolution, the criminal activity of man is but the reproduction of similar instincts in the lower animals, plus the mental and moral attributes.

Man in his social relation circumscribes the

whole arc of empirical criminality. The earliest form of collective expressions was the family. It is one unit of the social equation, the nucleus around which it rallied. Thus we see that, there being no law or not much law in these ancient days, the criminal tendency was reduced to a minimum.

The enlargement of the family relation or, rather, the subsequent development of the family into the tribal state, altered in a way materially the primitive social problem to that of greater complexity and detail. Cosmic, economic, and local conditions, together with many other subtle personal reasons, contributed to crystallize these transformations, and with it the growing class jealousies and tribal innovations. These tribal distinctions brought with them corresponding incentives to repeated criminal outbreaks and helped to materially swell the first crude tendencies toward homicide and plunder in and without tribal limitations. Thus formed the earliest antisocial instincts of the race and the individual.

Man is as much a wonder in the majority of his ruin as in the plenitude of his power and, to the well-organized mind, affords dire food for thought and contemplation in the one instance as he does admiration in the other. To know him at his best, it is necessary to know him at his worst; for, they both sound the depth of his potentialities and test the range of his possibilities. Qne class of people celebrate him at the zenith and climax of his possibilities; the psychologist studies him from the beginning, the breaking point in the chain of moral continuity, and so, if possible, tries to trace him in his devious windings of his bipsychological self to the ultimate end.

There are always certain factors necessary in every walk of life to either develop or retard that particular advancement, achievement, and even downfall.

Its Etiology

What then are the sympathetic factors, that enter into, and personally make up the criminal or criminal offender. They are:

- 1. Cosmic—that which is associated with his daily life; as, dietetic, atmospheric and climatic.
- 2. Social—his economic, industrial environment.
- 3. Social surroundings—proper, such as habits, customs, etc.

These factors strongly affect the bulk of crime.

4. Biological—a thorough understanding of his physical, anatomical and physiological characteristics.

Thus we see that we are contending with different classes of criminals, such as instinctive and impulsive recalcitrant; instinctive and habitual offender, being that of occasion. Therefore, we can properly classify the criminals under a few general heads-as (1) The instinctive; he has a predisposing bent toward innate criminal wrongdoing. His biological moral and mental makings are the results of a hereditary taint-and this embodiment leads him to immoral and antisocial acts. (2) The habitual criminal; he is a prototype of the instinctive kind, differing only in that his tendency to offence is not a hereditary one, but merely one of environment. (3) The single offender; having committed a misdemeanor, or a slight wrong, probably due to a passion or impulse, or an exaggerated idea of revenge, he is hailed before the court and, thereby, through the process of law, becomes a criminal,

Now let us study these various forms of criminals psychologically, and thereby come to some conclusion as to the best possible way, from the standpoint of psychology, to prevent the existing tendency to crime and abey its ascendency.

The instinctive criminal has a personality so well defined in his moral retrogression and antisocial tendencies that he stands foremost as a distinctive moral anomaly. He is a being who is at variance with the true instincts of mankind, and is antagonistic to the altruisms that have been evolved from primitive elements of benevolence and justice. We thus note that he is an anomaly in this advanced era of civilization, because now, in the modern form, he represents the primitive with instinctive savagery, which has not been eliminated in past racial evolution by the process of selection. He is thus an antagonist of event, the elementary moral sentiment and self-preservation of mankind.

The interpretation of such a being is a moral and not anthropological one. Like that of other men, his self revelation is simply an unfolding along the lines of common experience, gauged by ordinary test; for, this is the only satisfactory approachment to the real man, the normal and social character.

The greater menace to society is that criminal tendency which is slow and persistent rather than quick and sudden, for this form of offenders is always in our midst. This class has among them the petty offenders who, with feeble intellects and depleted vitality, ally themselves to instinctive vagabondage, and fairly bristle with promiscuous offenses,

rendering them pests to society.

The moral anomaly and representatives of his kind is the sporadic criminal. He commits acts without premeditation. He therefore reveals the purely animal nature unmodified and, so, traces the retrogression successively through savagery into animalism, the basis of true characterization of all criminals; he presents the example par excellence of the precipitation of allied primitive instincts with modern environment.

The moral and mental evolution of the criminal is potentially foreshadowed in both, the savage and the child. The psychology of the child is but the psychology of the man who has grown up and acquired an education, but whose repressive agencies tend to modify the innate tendencies.

Education is the equivalent for selection in the ethical evolution. Repressive forces are merely substitutional. Arrested development is the beginning of degeneration and is thus partially an explanation of the criminal phenomena; thus exemplifying racial retrogression in the individual.

Incipient tendencies are the prophetic germs of all future moral fulfilment. Thus it seems probable that the earliest manifestations of criminal tendencies in child life hold in embryonic form the future man. The tendency of the child to vanity, impatience, impulsiveness, revengeful disposition and, sometimes, innate cruelties is reproduced in the adult, as is also the lack of foresight and the purely vegetative tendency to live, thus attesting arrested development, in the underdeveloped man.

The psychological evolution of man is apparently analogous to his progress through the lower rudimentary stage. We see him pass in his moral psychological evolution from the animal, through the savage and barbarian, ultimately in the highest form of enlightened and civilized life. Thus, while physically he illustrates the doctrine of the survival of the fittest, his antisocial side emphasizes the survival of the unfittest, proving him therefore a social anomaly cast upon the banks of the present by the receding waves of past racial retrogression.

Psychological Distinctions

As with the botanist, so with the psychologist of crime, the studies and observations must lay bare the characteristics of their respective study, so as to enable them to draw conclusions therefrom. Thus grouping these salient features together, we analyze the psychological distinction of the criminal.

In the normal individual, the moral sense is so profound that it shines out distinctly as a beacon light and is the great characteristic that distinguishes him from the abnormal.

Moral insensibility is the great characteristic of the degenerate. His ethical defection is so marked that he is, many times, unable to distinguish between right and wrong. The apparent concern in which these abnormals hold their offences, the manifest indignation with which they view their punishment, and the sincerity, with which their every offense is condoned, bear silent testimony to their moral anesthesia. We thus see that the criminal's immorality becomes food for his vanity, and greater crimes become ideals for emulation while, with an innate relish, he loves to recount his unnatural deeds and can look upon the face of his victim with equanimity and complacency.

Cruelty. Lack of Remorse

Associated psychologically with moral insensibility is cruelty. History furnishes us with numerous instances of this trait, and it is a well known fact that the sight of blood arouses a latent thirst, even in the natures of those never suspected of such a predisposition. The uncontrollable impulse to a repetition of the first attack of murder, with the unnecessary torture associated with it, amply proves that the underlying stratum of the criminal character is cruelty.

The logical corollary to cruelty is the lack of remorse shown by the perpetrator of crime. The moral excusability that originally incited to criminality refuses to respond. The act being committed, conscience is found wanting.

Were the criminal to show the slightest signs of remorse, such moral reaction would manifestly throw the whole character out of harmony and render it self-contradicting.

The criminal's disposition could never exist with such signs as remorse. This accounts partly for the manifest sincerity with which these offenders deny their guilt, and the calmness with which they meet their doom, protesting their innocence even in the face of apparently sincere religious profession, and showing also their apparent indifference in speaking about their offences as if these were every-day commonplaces.

Impulsiveness

Among the most marked traits in the mental make-up of such a criminal is the lack of foresight. He acts with all natural impulses and confidence of the child. Prescience is not an attribute of his mentality; cause and effect rarely are brought face to face. This lack of foresight is due probably to a lack of the imaginative property of the mind. Being defective in this essential, he has no clear sense of the future and, so, without deliberation, he recklessly throws himself into wrong-doing.

The wrong-doer, never being satisfied with the existing conditions, is always looking forward for something new, and, like all nomads, is easily moved in his tastes and affiliations intellectually and morally. His range of emotions and impulses is narrow, ever superficial. His resistant powers being impaired, he is badly incompetent to give moral battle.

Though blushing, the honest man's barometer of morality and sensibility is lacking, there still seems to be a something normal about the criminals in that they are ever faithful to their associates or "pals."

Untruthfulness is a peculiarity common to all; but this feature is quite general in the wrong-doer, whereas it is exceptional in the moral man. This peculiarity is probably the outcome of an unrepressed tendency in childhood, which had grown along with him into manhood, where it was strengthened by habit and the necessity of defense.

The intelligence of the criminal is of a rather low grade, verging on the cunning of the savage instinctiveness of the animal and the simplicity of the child.

His thoughts and ideas are illogical, because his mental grasp is so narrow and feeble that he is unable to widen his range of thoughts other than to his immediate surroundings. His knowledge, other than that of a geographical nature due to his continuous traveling, is vile.

The philosophy of this class is very crude, chiefly about quasi-political economy and social economy. His arguments, aimed mostly at the wealthy, are full of sophistry and half truths, with a dogmatic felicity and recklessness of prophecy equaled only by his utter ignorance of fundamental principles. He has no sense of right. Patriotism is not a spontaneous sentiment with him; for, can he love a country wherein laws are made so unjust to him? His attainment and literary tastes, with very few exceptions, are very meager and are confined chiefly to light and sensational novels. His speech is a jargon slang; while his writing is done in unsystematized hieroglyphics.

The most pronounced anomaly in the psychic study of the criminal is his relationship to religion. Crime and religion stand for his moral antithesis and are found not infrequently blended in him in glaring contradiction. Thus, we see him committing terrible crimes on his fellow men, yet devoutly attending to the rites and rituals of his religion. However, this religious affinity is either of an emotional or a mechanical kind, and, as the natural tendency of either is not to make much of essentials, religion leaves him where it finds him.

The generic explanation of the origin of this religious phenomenon lies in the fact that germs of both, the criminalistic and religious instincts, belong to his original nature. As far back as history extends, we find them associated in his organic make-up.

Prevention of Crime

When a man is brought before you suffering from some habit or acquired diseased mind, try to fight his craving and passion and lust for wrongdoing by suggestions; for, prevention alone can bring about a cure.

Man was not born a criminal. If he is a "dope fiend," he did not choose the toxin. No, it was given to him to relieve him from some pain, and so it was injected into him in very small doses at first, presumably to relieve the pain. But the craving for it became irresistible and, when it had reached out and grown to such ruinous proportions, society, instead of offering him a helping hand was ready to despise and condemn him.

So, one sees that it is really society that causes the beginning of crime and the criminal. Then, when the instinct grows to serious proportions and has totally destroyed the man, society, dressed in all its glory, immediately goes heroically to work, not to prevent the first onset of the ruinous habit, but calling upon its emissaries, the minions of the law, the police, and the court—where the sole treatment is punishment by hard labor in a penitentiary.

From a psychological view point, it is utterly vague to speak of a criminal disposition, as such mental disposition were unified and located in one area in the brain. Such faculties, we know today, are the outcome of thousands upon thousands of processes, which through proper stimuli are going on in every cell in the brain substance.

We may, however, locate certain areas for certain kinds of sensation, but not wholly for the perception of a thing, and infinitely less for states, complexes, which are built up from ideas, emotions, and volitions.

How does the average man succeed in living a home life? Impressions and thoughts carry

to the mind numberless ideas which awake feelings of pleasure and dislike. The pleasurable idea awakens a desire for and an impulse to realize it in action, but the disagrecable idea awakens its impulse, and that is, to quickly get rid of the source of displeasure. Thus, no further will-act is necessary; we approach the attractive and escape the painful merely by the power of the ideas. The one idea tends to inhibit the other, for, an impulse to do a wrong is overpowered by a more vivid one, which foretells us the danger and holds us back.

The normal, decent individual demands that any ideas which stimulate to a forbidden action shall awaken at the same time a counteridea which shall inhibit the action, and that these inhibitory ideas shall be properly developed.

Crime, therefore, may result from various reasons:

- Social inhibitory ideas may not have been properly developed.
- 2. These inhibitory ideas may not come quickly enough to consciousness or may be too faint.
- The original ideas with their desire may be too intense or their emotions may be too vehement.
- 4. The mechanism of inhibition may not be working normally.
 - 30 N. Michigan Ave.

Wars Well Worth Fighting

By EDWARD SWALLOW, Mount Vernon, New York

S the early man knew it, war consisted A chiefly of whacking the other fellow over the head with a club as hard as possible and letting it go at that. As we knew it in the last terrible experience, war consisted of the wholesale destruction of human beings in ways devilish in their conception and fiendish in their execution. The sinking of the "Lusitania," the first use of poison gas, by the Germans, are examples of what man educated in the highest degree in science is capable when warring against another. In his desire to better his condition, to eradicate disease and prolong his life, man has applied his thought and reasoning powers to find out the cause and cure of those ills which afflict the human race. That the vast accumulation of such hard-won knowledge, gained for the purpose of saving and preserving life, should be used for the purpose of destroying it, is a thing at once inconsistent and monstrous and, if persisted in, may see the finish of the human race itself.

For thousands of years, man has devoted his thought and the best intellect of his times to the preservation of life and the betterment of the conditions he lives under. During the ten years previous to the World War, science had made a remarkable advance in the direction of the prevention of disease. We were putting into practice the discoveries of Pasteur, Lister and other benefactors of their race, a fair amount of control had been obtained over such diseases as tuberculosis, diphtheria, typhoid fever and pneumonia, and statistics began to show a decided decrease in the deaths from preventable diseases of all kinds. According

to the Bureau of the Census, there were 11,000 deaths from typhoid fever, in 1900, out of a total number of 539,939; while, in 1920, the number of deaths from this cause had fallen to 6,805 out of a total number of 1,142,558 deaths from all causes. The death rate per 100,000 population shows that the deaths from diphtheria had dropped from 43.3, in 1900, to 15.3, in 1920; tuberculosis accounted for about 60,000 deaths, in 1900, and dropped from 182 down to 100 or thereabouts, in 1920, per 100,000 population. In fact, all along the line of preventable diseases, a remarkable showing is made, proving that it is entirely possible to eradicate these scourges of humanity altogether by the methods of modern science.

Taking the whole world into consideration for years previous to the war, thousands of lives were being saved yearly in all nations by the preventive and curative methods of modern science, a truly remarkable and encouraging sign which meant so much less suffering and all the more happiness to the different peoples of the world. But it is a pitiable showing when we come to compare the loss in battle of 10,000,000 soldiers who were killed and the probable entire loss of 30,000,000 human lives "who might be alive today." This wholesale annihilation of human beings during the late war, when science turned from its great work of producing curative agents for the preservation of life and organized factories and laboratories into places from whence deadly gases and terrible explosives could be made for the sole purpose of destroying the very thing which we were using all our efforts and knowledge to protect, would seem to indicate that the mind of man loses its balance when fighting one another, and knowledge and reason are used for destroying that which, before, was the object of tender solicitude and scientific watchfulness. The logical outcome is that, under the present mental obsession regarding war, that nation which excels most in science, the science of or anic chemistry, will, one day, when it suits it; purpose, rule the world.

cience is the product of human reason, the calculating and investigating machine to which some improvement and addition is constantly being made, while old parts are being discarded. It has been made up piece-meal by facts and has gradually, with many a long pause in the work, been built up bit by bit util we have the splendid modern machine for the intellect to work with, called "Modern Science," which is so delicately adjusted, so well balanced in its parts as to adjust itself to every new fact and scientific truth which is discovered by its aid. Science is for life, not life for science, and, being as it is an accumulation of facts, these facts are valueless except as they may be applied to the problems of life. If we are going to use, or other nations mean ever to use, the incredibly powerful weapons which science can place in our hands for the destruction of life in warring upon one another, the knowledge which has its foundations in the very dawn of reason in man will be the means of either wiping him off the face of the earth in civilized lands and leaving the whole world in the hands of the most savage and ignorant, or the enslavement of the whole world by that nation which organizes her science for that purpose for her own selfish ends.

Peace Science vs. War Science

A new era was entered upon in the world's history, on April 22, 1915, during the second battle of Ypres, when Science, in the hands of a war-mad Germany, took a hand in the struggle and a dense cloud of chlorine gas choked thousands of brave men to death and sent thousands more back to the hospitals with rotted and inflamed lungs.

From then on until the Germans were defeated, an intensive chemical warfare was carried on by both sides and this mode of offense and defense seems now accepted as being part of the important operations which will distinguish future wars between any of the more civilized nations of the earth. Science will be studied along two entirely opposite lines. One

is, the production of remedial agents in the cure and prevention of disease in the endeavor to save thousands of lives yearly and add to the general happiness of the world. On the other hand, men of science will be feverishly engaged delving into the secrets of nature, with the aid of organic chemistry, in an effort to produce some now unknown gas or substance that will kill whole armies off in a few hours or annihilate the inhabitants of cities in a few minutes. For all we know, some scientist is now in possession of such a secret gas, deadly and efficient enough to make even one of the smallest of nations a menace to the world if it were looking for conquest. It is no stretch of the imagination that, some time in the future, an Asiatic nation, insignificant in numbers but pressed by the need of expansion, may one day quietly avail itself of a discovery of this kind and lay other nations under tribute or destroy them. From now on, no nation need be astonished at such a thing happening to it that has not prepared for such emergency.

No nation ever held a more complete monopoly for any weapon than did Germany for chemical warfare and she still possesses her enormous manufacturing plants with their very efficient organization. She has added to her experience, which her undoubted knowledge gave her, years before the war broke upon the world and, until the nations she was at war with are in a position to control any sinister moves on her part, realizing the great efficiency of the Germans as a nation from which so many valuable chemical discoveries have been given to the world, there is a sense of fear for the permanence of peace.

In the eyes of all Germans, their scientists are the greatest in the way of being producers of wealth in the country. They are also on a pedestal as making it nearly possible for Germany to have come out of the recent war a triumphant world conqueror; as they are well aware that, had they pushed their chemical warfare to the extreme limits of their capacity in producing poisonous gases, when they first astounded the Allies by the murderous attack by chlorine gas, the results would have been reversed and then, if the French were in the Ruhr in these days, it would be as slaves working out an indemnity.

Our Desire for Peace

The great heart of the American nation is set on peace, our women and millions of women in the war-scarred countries are bent on making peace permanent and secure. The large majority of men in all the warring countries, now that time has brought its softening influence to bear, are forgetting their revengeful feelings; the animal instinct to kill has sunk back into the depths of their natures, weakened considerably by the experiences they have gone through.

In the minds of all those responsible for the different governments, peaceful solutions of all difficulties are eagerly sought, the appalling consequences to mankind of another war between any of the world powers is fully understood. The civilized nations realize that, should another struggle between first-class powers take place, science in the shape of chemical warfare will win the day, a day which would end in the darkness and despair of the death of civilization. God in his mercy grant that man's insanity, desire for revenge, or lust of power shall never see the sun set upon the wreck of the experiences gained through the ages!

Worthwhile Wars Before Us

Science has several wars upon its hands that are well worth fighting. The most important is, of course, its battle against disease. "Ills that the flesh is heir to are no longer met with folded hands," and we are proud of the fact that the medical profession of America has always been found in the front ranks in fighting the many diseases afflicting human kind. For reasons which are well known, for some years before the late war, our medical men, the guardians of our health, were treating their syphilitic patients with a drug made in Germany. Our dye and textile trades were also controlled by the same country. America, the most progressive nation on earth, with its one hundred millions of people, was being controlled in its important dye and allied trades, even as to the health of the people, when certain diseases were to be combated through our physicians by drugs prepared and securely controlled in their manufacture and sale by a nation of about half our population, thousands of miles away. The World War taught us one mighty good lesson in showing us plainly where we stood in regard to our boasted independence of the rest of the world.

Well, those things are now past history, our own American scientists have risen proudly to the occasion, our medical profession is confidently fighting disease with American-made drugs, and our dyes are being manufactured at home. For the future, we shall not be blind in this respect to our own vital interests,

To carry the battle against disease on efficiently, our scientists need every encouragement. As Henry Ward Beecher said: "A man is educated who knows how to make a tool of every faculty, how to open it, how to keep it sharp, and how to apply it to all practical purposes." The intelligent direction of effort, the whole object of education is, that one may have more power, that he may do better what he has to do, AND MAY NOT HAVE TO DEPEND UPON ANYONE ELSE.

It is said of the late Dr. Robert Dawbarn, an eminent surgeon of New York, that, in sewing up a wound after an operation, one of his students observed that he always tied three knots where the custom was to tie two. Asked about it, Dr. Dawbarn replied: "The third is my sleeping knot. It may not be necessary to tie it, but it makes the matter that much the safer, and I find I sleep better for it." In their scientific war upon disease, both, our noble-minded physicians and the nation at large, will sleep all the better in the knowledge that their own countrymen are making the scientific weapons to fight disease.

The Pathology and Treatment of Hayfever By F. A. WIER, Racine, Wisconsin

THE prevalence of hayfever in the United States, based upon recent statistics, is 1,000,000 cases annually. While the average physician has neither the time nor the inclination to make an exhaustive study of the hayfever-producing plants, it is necessary at least for him to know something about the varieties in his immediate vicinity. This information has been carefully compiled by men who have made an exhaustive study of the subject and to whom we should give great credit for their untiring efforts in behalf of the horde of sufferers from what has been

aptly termed the yearly torment. While the list of wind-pollinated plants is very large, fortunately they can be divided into a few groups, or classes, which are indigenous to certain sections of the United States, which greatly simplifies their identification as the exciting cause of hayfever. They are divided into four groups which will answer all practical purposes:

1-Ragweeds (cause 85 percent of the hayfever east of the Mississippi River),

2-Grasses,

3-Wormwoods,

4-Chenopods.

To simplify matters still further, we may state that the spring hayfever is caused by the grasses while the fall hayfever is produced by the ragweeds. Furthermore, we may state that hayfever is caused by wind-borne pollens only. Insect-pollinated plants do not cause hayfever, except in some cases where directly applied to the nostrils in the act of smelling. Ha fever victims should be cautioned against conting in immediate contact with plants and flowers of all kinds. Also, city dwellers should for go trips to the country.

A large variety of trees are wind-pollinated, the oaks being the greatest offender. They should be avoided from March to June. It might be well here to do justice to the much maligned golden rod, which is insect-pollinated and does not cause hayfever. Also, we may state that, as a class, bright flowers with honey glands are all insect-pollinated and do not cause hayfever. So much for the exciting causes of hayfever.

The Salient Factor

The real factor in hayfever is a diseased condition of the nose itself, which renders it susceptible to hayfever. Strange to say, this fact has been entirely overlooked or only vaguely suspected by students of hayfever. To make my meaning plain, I will say without fear of contradiction that hayfever does not occur in a nose free from anatomical and pathological imperfections. To make it more emphatic I will assert that no havfever victim has a normal nose. Now, don't dispute this statement until you tell us whether or not you always make a rhinoscopic examination or just a swivel chair diagnosis? Well, Doctor, don't get peeved, it isn't being done much, of course; even some alleged hayfever specialists couldn't tell the difference between a middle turbinate and a hemorrhoid if they were served on gold plate.

Now, that we have decided to make a careful rhinoscopic examination of all hayfever patients, let us review the anatomy so that we may have an idea of the normal structures.

Normal Anatomy of Nose

The nasal cavities are two large spaces divided by a partition, or septum, composed of bone and cartilage. The roof of these cavities is formed by the nasal bones in front, the body of the sphenoid behind and the cribriform plate of the ethmoid between them. The floor is formed by the palatine process of the superior maxilla and the palate bones. The septum is formed by the perpendicular plate of the ethmoid above, the vomer below.

The lateral walls are formed by the superior maxillary, lachrimal, palate and sphenoids.

Each nasal cavity communicates with four nasal accessory sinuses. The frontal sinus above, the sphenoidal sinus behind, the ethmoidal sinus on the side behind the middle turbinate, and the maxillary sinus in the superior maxillary bone. The lachrimal canal connects the nasal cavity with the eye, the eustachian tube connects the nasal cavity with the middle ear. The nasal cavities are further divided into three longitudinal passages formed by the three turbinated bones. The superior turbinate arises from the lateral wall of the ethmoid bone. The middle turbinate arises from and is a part of the ethmoid bone, sometimes having very large ethmoid cells. I once removed a middle turbinate as large as my thumb, which was practically hollow, having one large cell over an inch long. The lower turbinate arises from the maxilla and palate bones.

The electrocautery specialists have made a lot of money cauterizing the lower turbinate, without benefit to the patient. Probably it was one of these specialists who invented spondulix spinal adjustments.

The superior nasal passage lies between the superior and middle turbinates. The middle passage lies between the middle and inferior turbinates. The inferior passage lies between the inferior turbinate and the entire floor of the nose.

These passages are very important, as they are the drainage canals of the nasal accessory sinuses. The superior passage drains the sphenoidal sinus and the posterior ethmoidal cells downward and backward. The middle passage drains the antrum of Highmore through the ostium maxillare, and the anterior ethmoidal cells through the infundibulum. The inferior passage drains the nasolachrimal duct.

In a state of health, we secrete about one pint of a watery solution in 24 hours, of which we are unaware, as the drainage is just rapid enough to keep the nasal cavities comfortably moist, any slight excess being evaporated by the air we breathe.

The nasal cavities, accessory sinuses, the pharynx, nasal ducts, lachrimal canals and conjunctiva are supplied by the same mucous membrane, showing how easy an infection may travel by continuity of tissue to all of these parts.

The Bacterial Factor

This explains my theory that hayfever is in fact an infection, not by the pollens but by the bacteria always found present in the nasal cavities, which lie dormant until some ex-

citant comes along and activates them into new life and virulency. This is the part played by the pollens. However, I will speak of this later.

In this brief sketch I have tried to outline the normal anatomy of the nose which should consist of a straight septum, turbinates not large or inflamed, secretion thin and watery and not excessive, just enough to give the parts a moist glistening appearance, no pus or scabs. A perfectly free passage on both sides at all times; middle turbinates and whole length of septum plainly visible without using cocaine to shrink the lower turbinate. No complaints by the patient of catarrh, headaches or hayfever.

Pathology of Nose

Now that we know the normal anatomy, it is very easy to recognize pathological anatomy. We will assume that we have a patient who complains of some nasal trouble. First, we inspect the external aspect of the nose which may or may not indicate a deformed septum. Next, we examine the nasal cavities, which requires a nasal speculum, a good light, and a head mirror.

The first thing we notice is, that the lower turbinates are very red and so large that they impinge upon the septum, so that your view is entirely obstructed. Now apply a thin pledget of cotton soaked in a 4-percent cocaine solution and partially squeezed dry so that no excess of cocaine is swallowed, spread this cotton over as much of the lower turbinates as possible and leave in place for five minutes. Then remove and you will probably find that the turbinates are so thoroughly shrunken that you will have a good view of the septum and middle turbinates. Now inspect the septum, see if it is straight or deflected to one side or has a letter-S twist which may block up both passages and obstruct your view of the middle turbinates. If so, apply a little more cocaine, pushing the cotton up to middle turbinates if possible, leave in three minutes and be sure it is not too wet. "Swallowing cocaine is the main cause of cocaine poisoning and can easily be avoided." Remove pack and dilate nostrils as much as possible with the speculum so as to get a view of the middle turbinates. If the deflection is on one side only, you will probably find the turbinate on the concave side very large, perhaps filling the entire cavity, while the turbinate on the convex side is atrophied from pressure of the septum. You may also notice pus flowing from over or under the turbinate. The septum may be more or less straight except for spurs of bone of various sizes and locations projecting towards the lateral wall and sometimes into it, or the nasal cavities may be so full of polypi as to completely obstruct the view and the patient complains of "catarrh" (physicians should discontinue making a diagnosis of catarrh, there is no such disease per se), difficult respiration, violent headaches, asthma, and hayfever. Now add to this nest of iniquity the irritating pollens of ragweed, etc., which will excite the bacteria (always present) into acute activity, and you have a lovely combination.

Now, Doctor, if you found any or all of these conditions in your hayfever patient, what would you do? If you have been reading CLINICAL MEDICINE for the last thirty years, the answer is easy. Clean up, clean out and keep clean. That motto does not apply to the bowels only. You may find garbage in any part of the body. And, what garbage-can could possibly smell worse than an ozena nose! These pathological noses may be likened to a pile of dry oak shavings. They may not cause any trouble until some fellow comes along and touches a match to them; then, the conflagration. The hayfever pollen is the match to the shavings in the pathological nose. Normal nose, no shavings, nothing to ignite.

To Remove Hayfever, Remove the Cause

To cure hayfever, remove the cause. How? With the knife, curette, snare, mallet and a chisel. I have a number of patients who will testify that this method cured them after all of the other fifty-seven varieties of treatment failed.

Dr. Scheppegrell, in his latest work, Treatment of Hayfever, 1922, says, any condition which tends to develop a hypersensitiveness of the nasal mucosa predisposes the patient to an incipient sensitization which tends to result in a persistent form of havfever. Marked septal spurs, ridges or deflections which cause a concentration of pollen in the obstructed nostril or which touch the opposite turbinal and thus cause irritation, congestion and hypersensitiveness, may form an important predisposing cause. Infection of the sinuses, especially of the ethmoid cells, should receive careful attention. While the percentage of cures is not high, seven percent, they should not be overlooked in the prophylaxis of hayfever. Nasal surgery in hayfever, however, should be avoided except in such conditions as indicated above. (These conditions would be found with surprising frequency if looked

for F. A. W.). One of our patients, a physician, had both inferior turbinates cauterized and then removed, and the right ethmoid cells eviscerated without benefit, and the surgeon advised a similar operation on the left side. Another patient had nine operations performed, including several electrocauterizations, (He leaves us in doubt as to the nature of these operations, but I assume that they were similar to the above. F. A. W.) without perceptible benefit to his hayfever. These cases indicate not only the futility of excessive surgery (He calls this excessive surgery!), but also the distressing character of a disease that would make a patient submit to these repeated ordeals. In hayfever, the electrocautery has probably been used more frequently than any other surgical method. It is based on the idea that, here, there is an intumescence of the inferior turbinals which the cicatricial contraction following the cauterization is intended to relieve. There are few cases, however, that have been benefited by this method, and we have seen many patients who claim that their condition was aggravated by the cauterization. In view of these facts, electrocauterization should be avoided in hayfever.

This statement of Dr. Scheppegrells is very instructive. It is presumed that, so far as our recorded knowledge goes, the above mentioned surgical procedures were the last word up to the year 1922. The most surprising statement of all is the fact that they cured seven percent of the cases with such inefficient methods. In the first place, cauterizing the lower turbinals is useless. In the second place, removing the lower turbinals is useless. In the third place, eviscerating the ethmoid cells and leaving behind the diseased middle turbinate is useless, for the reason that, if the ethmoid cells were diseased, the middle turbinate was bound to be diseased also, as they are practically all one structure. Furthermore, it is not easy to eviscerate the ethmoid cells without first removing the middle turbinate. So, in my humble opinion, the whole procedure was useless. The lower turbinates are seldom, if eyer, the cause of any trouble, although you will always find them congested in a pathological nose; but, like catarrh, this is only a symptom of trouble higher up. It needs no treatment of any kind. I have seen lower turbinates as large and red as a cherry shrink down to their normal size after the cause was removed.

Clean Out the Nose

Now that we have a fair understanding of the pathology of hayfever, the cure is a simple matter. Clean up and clean out the nose, increase the natural immunity of the mucous membrane. Nature provided us with a pint of antiseptic nasal douche for each twenty-four hours which, if not interfered with, will keep the nasal cavities washed clean and free from offending material. Mother Nature is a good old doctor and always willing to help us if we have foresight enough to work with her instead of against her. If there are large . spurs or if the septum is badly deflected, do a complete submucous resection. If the middle turbinates show evidence of disease, remove them and eviscerate the ethmoid cells at the same time. If the sphenoidal sinus shows evidences of disease, pus flowing from above the middle turbinate into the pharynx, pain located in the center of the head and radiating into the ears-ocular symptoms vary from impairment of the field of vision to complete blindness-clean out and drain; irrigate with normal saline solution, inject ten-percent argyrol and allow to remain. If the patient is a child or young adult, remove adenoids, also tonsils if necessary. It is probably unnecessary to state that none of these operations should be performed during the hayfever explosion but some time after the attack.

Owing to the fact that the following bacteria are always present, viz., micrococcus catarrhalis, bacillus of Friedlænder, pneumoccus, streptococcus, staphylococcus aureus and albus, these bacteria are now actively at work producing the infection of the nasal cavities known as hayfever. So, we hesitate to open up new avenues for infection. At this time, it would be absurd to use the pollen vaccines. However, a vaccine made from the above named bacteria is certainly indicated.

Curative, Prophylactic and Palliative Treatment

Unfortunately, few hayfever patients consult us early enough for the foregoing treatment to save them from the expected attack; so, all we can do is, to advise them to have their nose put in order as soon as possible after the attack. Of course, if they consult us a few weeks before the expected attack, it is a difficult question to decide whether to operate at once or to ease them through the attack and operate later. The amount of work needed will help us to decide. However, as a rule, I think it would be better to be on the conservative side and wait until the attack has passed. In these cases, we may resort to the pollen vaccines, constitutional treatment, emollient applications to the nasal cavities and a prescription containing epinephrin. These can be had in tablet form and are made by several well known firms. The following prescription is very beneficial as a preventive of nasal and bronchial congestion, and will certainly ease the patient through the attack, especially if complicated with asthma:

Ŗ	Epinephrin	grs.	2
	Pituitary, entire	grs.	1
	Thyroid	grs.	1 1/10
	Anterior Pituitary		
	Physiological salts comp	grs.	3/4

Sig. One tablet night and morning for several weeks before the expected attack. Increase the dose to four tablets per day about one week before the date of the usual attack.

In some cases, the prophylactic treatment will carry the patients through the season with little or no symptoms of hayfever, provided that they use reasonable precaution to avoid to pollen districts. They could hardly expect to pitch their tent in a mess of ragweeds and escape hayfever. Another valuable precaution is, to screen their windows with cheese cloth and keep this wet by a frequent application of water, as water will render the pollen innocuous and prevent its gaining access to the house. All patients have an immunity, up to a certain degree, to the pollen. As some more fortunate individuals have a complete immunity, so it seems reasonable at least to believe that, if our daily consumption of pollen could be reduced, we might escape or have a milder attack than usual. So much for prophylaxis.

Treating the Attack

Now when hayfever comes, what may we expect from treatment? This is the big adventure that taxes our skill to the limit. Well, we are not altogether beaten on this undertaking, if we keep in mind the conditions we usually find present in the nose and the indications for treatment. Suppose we find a nose completely blocked with polypi, very large lower and middle turbinates and a deflected septum. You wouldn't expect much benefit from the old-time squirting and swabbing methods. You might as well expect to extinguish a fire with an atomizer. Nor is this the time for pollen vaccines. The patient is getting plenty of them from the air by this time; his nose is also swarming with bacteria, This is where catarrhal vaccines may be expected to produce good results. This treatment should be pushed to the limit of tolerance or until marked reaction warns us to decrease the dose. Also prescribe four tablets per day of the ephinephrin combination and a morning dose of saline laxative. The patient should insert in the nostrils a cotton tampon medicated with 1 percent phenol-glyccrine three times a day for twenty minutes. This promotes drainage, lessens the congestion and may kill a few bacteria. The conjunctivitis may be greatly relieved by the following prescription:

B Cocaine Hydrochloridi

Acidi Borici......of each, grs. 5
Aquæ dist. M......oz. 1
Sig. One drop in the eyes t. i. d.

This solution isn't strong enough to do any harm. It will dilate the nasolachrimal duct enough to relieve the epiphora, for which the patient will be very grateful. Relieve the headache with acetylsalicylic acid or one of the newer preparations (like mygrone) which are more analgesic.

Now, we will presume that the next case is free of polypi but otherwise just as bad. We treat him just the same as the first case, except that we can do more locally. So, we add to the treatment a spray of antipyrine 4-percent solution. This is to be carried by the patient and used every half hour during the day. This keeps the nasal cavities clean and relieves the congestion, as antipyrine will shrink the tissues considerably, thereby promoting drainage and respiration. At bedtime, the following prescription is very good:

R Anesthesine

Menthol
Camphor
Resorcinof each, grs. 10
Ungt. Petrolat, albi......oz. 2

M. et sig: Apply in nostrils and rub on sides of nose and over forehead.

I don't know just how much good the external application does, but the patients claim that it affords additional relief. This salve is anesthetic and healing to the irritated mucosa. If there is sore throat or cough, apply a little on the tongue—the quick relief is surprising.

We will take the next case, which represents the milder type of hayfever, resembling a slight but persistent cold. In this case, we omit the vaccine and epinephrin compound. In 90 percent of these cases, we have a specific in nitromuriatic acid, dilute, "freshly prepared", 10 drops in a glass of water after meals and at bedtime. Also prescribe the antipyrine spray and the salve. It is nothing unusual for patients to be entirely free from hayfever in a few days after being put on this treatment and to go through the season without any recurrence of the distressing symptoms.

Asthma: Adrenalin, by its action on the

sympathetic nerves, relaxes the bronchioles. The epinephrin compound will relieve or prevent most hayfever-asthmas. However, for the more acute distressing attacks, a hypodermic injection of adrenalin "1:1000", ten minims, in distilled water thirty minims, will afford immediate relief. Incidentally, it is well to remember that this will also stop ether vomiting.

Caution: Do not use adrenalin in the nose, as the after-effects are worse than the condition you wish to relieve.

Resorts: The only guaranteed antihayfever resort should be on a weedless island ten miles from the mainland.

Weed laws: Twenty-four states have antiweed laws which are about as dead as the Volstead law.

A Few Minutes With the Urine By J. HENRY DOWD, Buffalo, New York

Genitourinary Surgeon, Buffalo Hospital Sisters of Charity, Mercy and Contagious Hospitals; Consulting G-U Surgeon Emergency Hospital, Etc.

A HUMAN being consists of a body and a soul; the former made up of bones, flesh and fluid; these we can see and, in them, detect pathological changes, when they are present. The soul is like electricity or air. We cannot see it, but we can feel its presence. Here is situated the mind; namely, reason, will power,

An analysis of the human body shows it to consist almost entirely of chemical elements as follows: Water, 10 gallons; carbon (coal), 24 pounds; iron, ½ oz.; lime, 7 pounds; phosphorus, 1.8 pounds; sugar, 1/5 oz.; salt, 1.8 oz.; iodin, 1/10 drop; about 10 ounces of potassium, fluorine, sulphur and magnesium. Of gasses we find 112 cu. ft. of oxygen, 60 cu. ft. nitrogen, and 561 cu. ft. of hydrogen.

Scientists tell us that the human body changes completely every seven years, that at the end of that time not one single cell of former construction is present. With such evidence, there can be but one logical conclusion: There is a constant destruction going on; but, to continue life, there must be constant reconstruction.

For this reconstruction, it is necessary that a constant intake of nutrition be furnished, and we find that the average human adult consumes about one ton of food and fluids a year, which, through a process of digestion, assimilation and metabolism, are converted into the aforementioned substances.

The Organism-A Laboratory

Viewing the elements present as purely chemical, can we not look at the human body from the standpoint of a large chemical factory in which crude material is received and converted into the different elements that are necessary for reconstruction?

In nature we know that, where there is

combustion, there is always residue, or endproducts; waste, so to speak, which is thrown off. The very same condition takes place in the human laboratory or this body of ours.

If anything were going wrong in the factory, if by-products were not being produced as they should be, the residue, or end products, would be immediately sought for as a source of information. Why not so with the human factory?

The chimney, sewer, ash pile and refuge heap show residue from the factory. The lungs, skin, kidneys and bowels show the same from the animal body, be it man or heast.

To go deeply into an analysis of the foregoing would be far beyond the scope of any one medical article, and it would necessitate knowledge, time and apparatus that the general practitioner has not at his command. Yet, he must try and give the suffering public the best thought of the present day, as far as possible.

The Urine, a Barometer of Health

The most available and knowledge-imparting excretion, as far as help in diagnosis goes, is the urine. To estimate all its chemical constituents, would be a task far beyond the possibility of the busy general practitioner. However, there are substances which, when present, are easily and quickly found and will give information of a valuable nature, assisting in forming an opinion as to existing disease.

Too much confidence should not be placed in specific gravity. I have failed to find sugar at 1036, and noted its presence at 1016. It might be safely said that a gravity of 1005 or less is a most positive indication of great nerve irritation, such as hysteria. Elixir valerianate of ammonia will quiet the condition in a very few hours.

Normal urine should be perfectly clear: It

^{*}Read before the Physicians and Surgeons Club Western New York at Angola, N. Y.

is opaque in the order of frequency, in the following conditions: Bacteriuria (very common in women) due to fermentation; pus; earthy phosphates (specimen greenish in character, will dissolve by adding acetic or nitric acid); epithelium, spermatozoa, mucus. If urine becomes opaque on cooling, it is always due to urates.

Albumin is due to a leakage of serum from the blood vessels and may appear in the urine as follows: (1) In the presence of inflammation anywhere along the urinary tract, always present in the acute stage of gonorrhea, and pyelitis at any stage; (2) it may or may not be present in Bright's disease; is always present in the parenchymatous variety; (3) alterations in the blood pressure in the kidneys, where there may be a congestion due to heart trouble; (4) changes in the blood itself, whereby diffusion of serum can take place; (5) prostatic secretion escaping into the urine will give rise to albumin reaction.

Eliminating Bright's disease, inflammatory conditions of the tract, and heart disease, albumin found in the urine (especially if the urine be scant) is as positive an indication of anemia as the most careful laboratory test for that condition.

In parenchymatous inflammation (Bright's disease) and in anemia from any cause whatever, Basham's mixture is the remedy of choice; its action is quick and sure.

Glycosuria, or sugar in the urine, is due to a non-oxidization of carbohydrates. Diabetes, as it is known, should be viewed from two standpoints: functional and organic. The former is caused by a defective metabolism and the latter by a pathological change in the Islands of Langerhans situated in the pancreas.

As all individuals having sugar in the urine do not have the characteristic symptoms of diabetes (thirst, passing great quantities of urine, or the facial appearance), it should be a matter of routine to examine all samples of urine for sugar. For a quick and, to all evidences, fairly accurate test, the "Haines" is preferred. To estimate the percentage with satisfactory accuracy, the urine can be diluted, 1 drop of urine to 9 of water. Then, if it takes but 1 drop to show sugar, and at the next examination 4 or 5, improvement or otherwise can be noted and information given accordingly. (If sugar does not appear with 8 drops of undiluted urine, it is not present.)

It is quite impossible to state on the first visit whether a case is functional or organic, but, with a marked increase of indican, and urorosein, and a plus Phosphatic Index, it is fair to assume that the glycosuria is functional and will be completely recovered from.

My method of treatment is as follows: more or less restriction of carbohydrates for the first week or ten days, and Bromarsarum (bromide of gold and arsenic), commencing with 10 drops and increasing 1 drop a day up to 20 or 25, three times a day. If, at the end of ten days or so, sugar is rapidly decreasing or entirely absent, a baked potato and a couple of slices of toast are added to the menu and the medicine continued.

If, at the end of three or four weeks, sugar is absent, the diet may be increased gradually until a full carbohydrate intake is arrived at or, in other words, there is no curtailment whatever.

If, with no curtailment of diet whatever, sugar does not reappear, it may be safely assumed that the glycosuria was functional; if then the Phosphatic Index is normal, the medicine may be stopped. I have had many cases in the past three or four years in which sugar has not returned, although no dieting and no medicine had been used.

Galen, some time between the years of 130 and 210 A. D., was the first to describe Diabetes. People who had this disease during those early days may have been more inconvenienced and died sooner than today, but, nevertheless, sooner or later true diabetes accounts for death now, the same as it did in the first century.

Diabetes Diet

It is a sad mistake to diet diabetics rigidly, that is, to entirely deprive them of carbohydrates for any length of time. At the same time, it is inadvisable to suddenly change them to a rigid nitrogenous diet or allow long railroad trips. These are conducive to coma, a very serious condition that may develop at any time.

An examination for acetone and diacetic acid should always be made; these substances are very important as to prognosis and may indicate an oncoming coma.

My method of dealing with organic cases is, to avoid sweets and sugar, candy, etc., but allow them a reasonable amount of carbohydrates. Avoid all exertion, especially wetting or chilling of the body. Although it is not necessary or, possibly, good practice to continue medicine without interruption, my best results have been obtained from the use of Bromarsarum in doses from 12 to 15 drops in water three times a day. With this treatment, I have had patients live ten to twelve years

with little or no inconvenience to them.

Evidences of Incomplete Combustion

Indol is formed in the small intestines, becomes oxidized in the blood, unites with sulphuric acid and appears in the urine as indican.

To some extent, it is present in all urines, but its appearance to any extent is indicative of some systematic derangement, generally integratinal putrefaction.

Occasionally, free crystals: oxalic, uric acid or phosphates (coffin-lid variety) accompany indican. This is evidence of malassimilation or defective metabolism. Intestinal digestion, assimilation and metabolism being a function entirely under control of the nervous system, the Phosphatic Index will give valuable information. If the index is high, a sedative is indicated, such as the bromide of sodium or the elixir valerianate of ammonia. If it is low, nerve-cell nutrition is required.

The following case is an example:

Mrs. S. referred by Dr. Decot, oculist. He had treated her for some time for iritis; pain was constant, especially at night. She had been treated for three or four weeks for rheumatism; a spinal puncture had been made for syphilis diagnosis; teeth and tonsils xrayed; all were negative. Dr. Decot advised removal of eye. This advise was concurred removal of eye. This advise was concurred in by Dr. Park Lewis, but, before operating, an index was asked for. No pathological condition in urine, except free crystals of oxalate of lime, great increase of indican and Phosphatic Index 30 percent minus. The following prescription was given: Caroid grs. 40, Fl.-ex. valerian oz. 1, Mix. Phos. Comp. (Dowd), 2 ozs., 1/2 spoonful in milk twenty minutes after meals. In ten days, she reported, no pain. Examination showed no crystals, only very slight indican reaction, Phos. Index 10 percent minus. The medicine was continued for a week or so longer. Two years afterward, this lady had had no return of pain, nor did she have to use glasses.

Nerve Metabolism

It is generally conceded that the brain is the source of life; every action, thought, word or deed; all energy and motion has its origin in the brain.

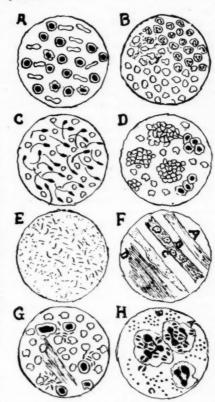
The alkaline phosphates in the urine show the energy of the nerve metabolism; whether the nerve cells have sufficient nutrition, and how it is being used.

In any obscure case, in any case where recognized treatment is not followed by desired results, where resolution is slow from any inflammatory condition, the Phosphatic Index will give information of the most valuable character. This can be proven by the rapid and permanent results that will follow medication directed along lines of the reading.

The Microscope

The amount of information that the general practitioner can get from use of the microscope will be surprising, even though only the ½-inch objective be used. But little technical skill is necessary.

Opaque urine can at once be differentiated as to cause, whether it is due to pus, earthy phosphates, epithelium, spermatozoa, bacteria, or whether blood, casts or free crystals are present.



(These figures are only slightly larger than will be seen with a ½-in. objective, and need no staining. G and H, as seen with the 1/12, oil immersion; tubercle bacilli can be stained with carbol-fuchsin, gonococci and others with methylene blue).

Blood cells are frequently found in the urine, although the fluid may have no color showing its presence; albumin will always be present. Free blood cells in the urine indicate some pathological condition. They may be the very first evidences of tuberculosis, stone or tumors of the bladder or kidneys.

The finding of pus will quickly differentiate a frequency of urination; due to hysteria from

that of diabetes. If pus is present, it indicates an inflammatory condition. Pus in clumps (resembling a period or comma, of course, greatly increased in size) has its origin either from the prostatic ducts or pelvis of the kidneys. In the latter instance, albumin will always be present; the pelvic epithelium will appear overlapping, in shingle-like formation, and on standing the pus will gather in the bottom of the glass in a gelatinous mass. This is due to a colloid substance secreted in the pelvis of the kidney.

Spermatozoa may be easily found with a ½-in. objective. If they are passed dead, they will be curled, bent or twisted; if alive, they will be almost straight. The Phosphatic Index will quickly tell the cause. If low, give nervecell nutrition (phosphorus) to strengthen the muscle around the ejaculatory openings; if high, sedatives to quiet the irritability of the mucous membrane of the posterior urethra. Spermatorrhea should not be diagnosed on one finding; the spermatozoa may be spontaneously expelled as the bladder expels the last few drops of urine.

Bacteriuria is due to fermentation within the bladder; it is common in women, and men with obstruction, as hypertrophy of the prostate or due to stricture; fermenting urine has a disagreeable odor.

Patients having bacteriuria are always in a low state of health; an increase of indican and urorosein usually accompanies the condition, showing fermentative changes in the intestinal tract also.

These conditions are easily corrected by removing the cause where one exists, and increasing the resisting power of the patient.

Casts in the urine may be true or false; that is, they may show inflammation of the kidneys, "Bright's disease," or they may be due to an oversupply of protein being taken by the mouth. In the latter case, the kidneys cannot take care of it, and some passes away in the form of casts.

Differentiation of these conditions can be made from the appearance of the epithelial cells that may be attached to the casts. If a pathological condition is present, the epithelial cells will appear degenerated; that is, more or less withered instead of the normal round cells about the size of a pus cell. The history of the case will greatly aid in clearing the diagnosis. In case of a urine of about 1010 specific gravity, with a few casts, and albumin present or not, if the individual complains of a "bad stomach," gas, dyspepsia, also headache, accompanied at times with dizziness and

specks floating before the eyes, it is fair to assume that renal derangement is present in the form of *interstitial nephritis*, and especially so if the person has been what is termed a "high liver," has partaken freely of rich food: shellfish, lobster and the like, for any length of time.

The parenchymatous variety preesnts a somewhat different picture. The symptoms mentioned will be present in more or less degree, but the patients complain of an interference with breathing, have a sort of a bronchial catarrh and, if questioned carefully, may admit that, at night, their feet swell slightly around the ankles. In this condition, the urine is diminished in quantity, contains many more casts and, generally speaking, albumin is always present.

Both conditions demand a curtailment of diet, as to red meat, shell fish, asparagus, tomatoes, and rich foods; only the most nonirritating nourishments should be allowed and such fluids as cider and spirituous liquors are absolutely forbidden. Medicine should be used with great care. It must be remembered, all medicines are eliminated by the kidneys, and their constant use only adds extra work to the already weakened organs.

In the first instance, the blood pressure, which is generally high, can be controlled to a great degree by sedato-alteratives (I use Bromarsarum—bromine, gold and arsenic) 10 to 15 drops in water three times a day. This not only lessens arterial tension but causes an absorption of inflammatory exudate from in and around the vessels.

In the parenchymatous variety, anemia is almost always present. The best results will follow the use of Basham's mixture, 2 teaspoonfuls in water after meals.

It is very difficult to find tubercle bacilli in the urine, unless ulceration is present in some place along the tract. There are, however, certain symptoms that are almost as pathognomic as the finding of the bacilli.

There may or may not be a history of venereal infection (gonorrhea), especially is it very suspicious if there is not. The urine has a ground-glass appearance, due to pus, and occasionally floating débris are seen. Blood cells may be present, and are very prone to be if any irritation (sounds, catheters) has been caused; it is at this time that tubercle bacilli may be found. Frequency of urination is one of the first symptoms, particularly so if the bladder is involved. This is due to the inflammation, and especially to the contraction which always occurs in tuber-

culous cystitis. This contraction, which is due to the involvement of the muscular and interstitial tissue, causes the bladder to become lessened in capacity. It at times contracts to an extent that only an ounce or so of urine or solution can be retained at one time.

In the acute but simple inflammatory conditions, eight or more ounces of fluid can be used with but very little distress to the patient and this is a very important point. If silver nitrate, even in a one to 16,000 strength is used, in the simple inflammatory conditions, it is easily borne by the patients, and very little uneasiness will be experienced by them after passing it. On the other hand, if the condition be tuberculous, they will complain of great pain when even a small quantity is used and, after its passage, much distress is evidenced for from 12 to 24 hours. Using such treatment, proof that it is not of a simple variety is evidenced by practically no improvement whatever, whereas, in simple cystitis, there is a marked amelioration of all symptoms and a great decrease of pus.

Summary:

If it is possible, it would be a very wise procedure to examine the urine of all patients. In many, where but very little of value might be supposed to come from such an examination, the most important information as to cause may be found. It should be a rule of the physician to examine every specimen of urine where well recognized remedies do not seem to bring about recovery or resolution. Often it is found that anemia exists or that there is a defective metabolism, as will be indicated by a great increase in indican with free crystals of oxalates, uric acid or coffinlid phosphatic crystals. In these cases, the Phosphatic Index will at times quickly reveal the true cause, viz., that energy or resisting power is at a very low ebb, due to a want of nerve-cell nutrition.

It should be an ironclad rule, not to be broken: Examine the urine of all functional cases. Eighty percent of these patients consult you at your office; they are the ones that have made the rounds, without very much improvement. They are the ones that sooner or later fall into the hands of men that, we know, cannot do more than make an impression on their minds; but they do that, and, strange as it may appear, many of the patients are relieved, so that they go forth praising one of the pseudo-healers and condemn us.

Undernourished blood cells (anemia), or nerve cells (neurodynia) mean a weakened state of the mind. Build up the former; in not all, but in a great many, improvement will take place promptly.

Ten to fifteen minutes spent with a sample of urine will often make an open book of many puzzling cases.

437 Franklin St.

The Menace of High Prices and a Rational Remedy

SPECIAL ARTICLE

"If the people have no bread why don't they eat cake?"

The present industrial and financial impasse portends a revolution unless prompt measures of relief are applied. Our statesmen have no remedy, no constructive policy to adequately meet the dangerous situation, and weakly advise a six-month truce on the industrial battle field. Just wait half a year and something may happen, some good fairy, forsooth, may bring relief!!! The queen's remedy was no more foolish than such an absurd program in this time of a similar peril.—The Author.

Man has solved the problem of production but has failed ignominiously on the easier and simpler one of distribution. He makes a watch for \$5 which is retailed at \$25, the delivery charge being \$20 on a \$5 product. Michigan farmers get 40 cents per bushel for potatoes which are sold for \$1.60 in the adjoining state, the delivery charges being \$1.20 on a 40 cent product. Michigan farmers also raise sweet corn for \$15 per ton which is sold at retail in cans for \$125 per ton, the consumer paying \$110 for the delivery of \$15 worth of corn. California farmers get \$1.60 per box for oranges which cost the consumer \$4.80 per box, the delivery charges being \$3.20 for a product worth \$1.60. Arkansas farmers get 60 cents per basket for peaches which are sold in northern states for \$3.50, the delivery charges being \$2.90 on a 60 cent product.

Indiana farmers get 60 cents per bushel for

tomatoes which are sold in cities not far distant for \$3 per bushel, delivery charges being \$2.40 on a 60 cent article. New York farmers get 5½ cents per quart for milk which is sold in New York city for 18 cents per quart, delivery charges being 12½ cents on a 5½ cent product. Farmers along Chesapeake Bay get 18 cents per quart for oysters which are sold in Washington for 80 cents per quart, delivery charges being 62 cents for an 18 cent product. Everything else is produced and distributed on a similar basis, the delivery charges varying from \$2 to \$10 on products whose initial cost is but \$1.

Has All Facilities, But-

What a sad commentary on man's intelligence!!! He has the fast freight, the lightning express, the swift motor car, the telephone and the telegraph. Yet, with all these splendid facilities for quick and cheap transportation, he pays more for the delivery of his products than it cost to make them. If he had to do this work with a push cart or an ox wagon, there would be some excuse for the high charges.

Profiteering is not the cause of this astounding situation. If it were, all middlemen would be rolling in wealth. On the contrary, however, Dunn and Bradstreet show that only three percent of those engaged in business make any notable financial success. Middlemen are not thieves and scoundrels. They are doing the best they can, furnishing the cheapest service possible with their old-fashioned and ridiculously inefficient methods. They are not wicked but merely stupid.

Why should delivery charges be so much greater than manufacturing cost, inasmuch as it is a great deal easier to carry a product to the user than to make the product? It is because man has studied the problem of production and ignored that of distribution. He has organized, systematized and mobilized manufacture. He has developed and improved methods and eliminated waste in production; but in distribution he has made no progress whatever, being content with methods in vogue from the beginning of civilization, methods that belong to the age of the spinning wheel, the stage coach, the sickle and the tallow candle. A host of middlemen stand between the producer and the consumer, each one of whom heaps on his heavy overhead expenses, losses and profit, the result quite naturally being a transaction topheavy with delivery charges. They are using the old-fashioned sickle, so to speak, in the age of the efficient modern twine binder.

Delivery Charges Main Cause

Democracy applied to industry is now offered as a remedy for high prices. A democrat, however, could not cut any more grain with a sickle than an autocrat. Neither can democracy cut down delivery charges while the present methods are maintained. Delivery charges can be cut down only by the adoption of a new marketing plan based on modern principles, principles of efficiency, system, mobility of operation and elimination of waste, the same principles that have made production simple and inexpensive.

Obviously, the sensible thing to do would be, the adoption of a better method for performing distributive work. A new system of marketing, called the postal market, embodies the modern features just mentioned and would furnish in consequence a delivery service at a reasonable figure, about 10 cents on the dollar. This plan was recently tried out in a modified or incomplete form in disposing of the surplus army food, through the post office. The trial was a splendid success, as high as 45 percent being cut off the prevailing market price.

Would be More Satisfactory

The postal market, however, would be much more satisfactory than the modified plan just mentioned. This plan would require a market house adjoining the post office where all sorts of food from the farm, factory and packing house would be displayed for sale in standard grades, and standard packages. People could visit this market house and carry home their purchases or they could give their order by telephone and have it sent out on the regular mail delivery. A consolidation of food and and mail delivery would save an enormous amount of labor. Delivery work would thus be mobilized, systematized and made highly efficient. One trip would suffice for the delivery of milk, bread, the daily paper, mail, groceries and other supplies, each one of which now requires separate carriers. Food would be collected in the country by rural mail carriers with motor trucks and carried without stop or delay to the city postal market, whence it would proceed direct to the table. The delivery charge would be just sufficient to cover the actual cost of hauling the food from the farm to pantry. The enormous and heavy charges of the middlemen would thus be abolished.

The postmaster in the state capitol and the county-seat postmasters would form a clearing

house for foods which would forward any surplus above local needs, to the nearest point needing it. The mobility of operation and rapid delivery would eliminate loss by spoilage which is the big handicap under present methods.

The postal market should not be confused with marketing by parcel post. The latter plan lacks a vital part, viz, a connecting link between the producer and the consumer. The postal market house supplies this very necessary link, and by handling food only in standard grades and standard packages a satisfactory service would be furnished.

Mobility of Plan

The mobility of this plan would reduce delivery charges to a minimum. People would no longer have to pay 121/2 cents for the delivery of 51/2 cents worth of milk, or \$1.20 for the delivery of 40 cents worth of pota-Prices could be cut in half and still leave a good margin to cover transportation costs. Milk could be sold in New York city for nine cents per quart instead of 18 cents, which would leave 31/2 cents for carrying 51/2 cents worth of milk from farm to table. This plan goes straight to the heart of the big problem confronting the world and shows the only road to relief. Something must be done and done quickly to relieve the present industrial and financial impasse; otherwise the smouldering fires of revolution will burst forth in all their fury.

Paying more for the delivery of a product than the original cost of the product is a fatal economic sin whose inescapable penalty is social unrest, strikes, riots and anarchy. Why should people be content to pay 121/2 cents for the delivery of 51/2 cents worth of milk, \$1.20 for the delivery of 40 cents worth of potatoes, 62 cents for delivery of 18 cents worth of oysters, 20 cents for delivery of three cents worth of sweet corn and other foods in proportion? Their discontent and unrest are founded on just grounds and, unless society quickly repents and abandons this grave sin which is directly responsible for the world-wide industrial turmoil, revolution with all its ghastly features will be the penalty. This is not a threat. "The forces of the world do not threaten, they operate." The colossal tide of unrest is rising rapidly and will overwhelm us unless the proposed measure of relief is speedily adopted.

As a Labor Measure

Union labor is concerned chiefly with getting a larger share of its products. Unfor-

tunately, however, labor's position in the social body is very like that of an ox in a treadmill which walks all day long in a futile effort to reach the food placed just out of reach. Every raise in wages is immediately nullified by a similar or greater advance in the price of labor's products,—hence the goal is always receding and unattainable.

The Railway brotherhoods, realizing the futility and stupidity of such an endless and fruitless struggle, have demanded a cut in the cost of living instead of another increase in wages. If this end is to be attained, it is obvious that some new factor must be introduced. This new factor is the postal market which will reduce prices, not in the usual way by a cut in wages, but by cutting down delivery charges through the adoption of more efficient methods and giving labor the benefit of the saving. This plan would cut the cost of living in half, which would be equivalent to a doubling of wages. Labor would thus attain a substantial and permanent gain.

The Plan Is Practicable

This plan is not a visionary scheme of an impractical dreamer. The idea in a modified way has already been put in successful operation in disposing of surplus army food heretofore mentioned. As a distributor of army food, the postoffice has demonstrated its ability to function as a middleman. There is no good reason why it should not continue this important service and, extending it to all sorts of food, thus establish the postal market in its complete form.

Labor has learned by long and bitter experience the futility of strikes, increased wages and still higher prices, a vicious spiral ending in a final collapse called a panic. To attain its objective, new tactics must be employed, the tactics proposed by the railway men, viz, a reduction of the cost of living. The postal market is labor's new weapon to replace the strike. Let labor champion this measure, and its adoption is assured.

A complete description of the Postal Market is found in Bulletin No. 101, Department of Agriculture, Notre Dame University. Price 10c per copy, \$5.00 per 100. R. L. Green, Marketing Expert, Notre Dame, Ind.

^{*}Some years ago, the South Bend News-Times (Oct. 12, 1919) printed a communication from Prof. R. L. Green, Marketing Expert, at Notre Dame University (Indiana), which contains a proposition for cheaper distribution of farm products. The plan appeals to us as possessing merit. Physicians are interested in economic modes of production and distribution of food stuffs. They should be attracted by a concrete and constructive proposal for improvement such as that suggested by Professor Green.

A Brief Consideration of Pathologic and Physiologic Death

By EDWARD PODOLSKY, M. D., Brooklyn, New York.

DEATH may be defined as that condition brought about by the complete disturbance of the mathematically harmonious activity existing among the vital organs of the organism. The cause of death is but this one; but the nature of the cause is twofold, there being that death which is pathologic (unnatural), and that which is physiologic (natural).

Pathologic Death

Pathologic death is that which physiologic death is not. That is to say, while the cause of a truly physiologic death is one, the causes of unnatural demise are many. It thus becomes a necessity to define pathologic death in terms of physiologic death, and any cause that deviates from the one cause of natural death leads to a pathologic demise.

The most prominent cases of pathologic death are those occasioned by crushing, by poisoning, by destruction of vital organs through mechanical, chemical and abnormally degenerative means. In fact, the causes of pathologic death are so many and various that even a very brief consideration of but a small fraction of them would require a thesis of many thousand pages.

Physiologic Death

Natural death is the incidental result of cellular differentiation. Weismann's views on this phase of the topic is of great interest and the following should be especially noted:

"1.—Natural death occurs only among multicellular beings; it is not found among unicellular organisms. The process of encystment in the latter is in no way comparable with death.

"2.—Natural death first appears among the lowest heteroplastid metazoa, in the limitation of all the cells collecting to one generation, and of the somatic or body-cells proper to a restricted period; the somatic cells afterwards in the higher metazoa came to last several and even many generations, and life was lengthened to a corresponding degree.

"3.—This limitation went hand in hand with a differentiation of the cells of the organism into reproductive and somatic cells, in accordance with the principle of division of labor. This differentiation took place by the operation of natural selection.

"4.-The fundamental biogenetic law applies

only to the multicellular beings; it does not apply to unicellular forms of life. This depends, on the one hand, upon the mode of reproduction by fission which obtains among the monoplastids (unicellular organisms) and, on the other, upon the necessity induced by sexual reproduction for the maintenance of a unicellular stage in the development of the polyplastides (multicellular organism).

"5.—Death itself, and the longer or shorter duration of life, both depend entirely upon adaptation. Death is not an essential attribute of living matter; it is neither necessarily associated with reproduction, nor a necessary consequence of it." ("Essays upon Heredity," vol. 1, pp. 160-161.)

Exactly what is the process of physiologic death in the highly specialized individual? Researches have brought several facts in explanation. There begins, from the day of the birth of the complex organism a struggle between the primitive and specialized cells that continues throughout life. Disease and accident may cause an overactivity of the primitive element (conjunctive cells) and hasten death which would be pathologic. On the other hand, if there is an absence of abnormal excitation of the conjunctive cells and they continue to triumph over the specialized cells. natural, or physiologic, death results within a longer interval.

This activity of the primitive element tends to bring back all to a primitive condition where each cell was sufficient unto itself. But the organism is one where all is coordinated, and this leveling process is fatal. The cells (conjunctive) replacing the specialized element are in no way capable of carrying out the highly organized and coordinating activity, and finally there occurs a complete disturbance of this vital activity, and natural death results.

This phenomenon of displacement of specialized cells by the primitive ones occurs everywhere in the tissues,—and the relation that these bear to the vital activity affects it accordingly. Primitive cells (the osteoclasts) multiply around the osseous laminæ, whence they draw the pith of the bony substance. The muscles undergo this same degeneration, being

[Concluded on page 618.]

Surgical Seminar

Conducted by GUSTAVUS M. BLECH.

The Seminar

THE appeal, in the June issue, to let the Editor of the Seminar have an expression regarding the desirability to continue the Seminar, has resulted in the receipt of a large number of letters from our readers in which we are urged not to discontinue our efforts.

This is indeed gratifying, and, while the Editor regrets that, on account of being ordered away for a two weeks' military encampment virtually at a moment's notice, he is unable to acknowledge the communications containing constructive criticism individually, he desires here to thank all who have gone to the trouble of saying encouraging words.

The readers will rejoice with the editorial staff to learn that we have lost one of our oldest and best collaborators, Colonel George Acheson, of Kingston N. B. Canada, and have gained in his stead *General* George Acheson, of Kingston N. B. Canada,

We congratulate the General on his wellmerited promotion. Evidently, the fact, that our distinguished friend has exchanged the crown and two stars for crossed batons on his shoulder knots, does not overawe our other collaborators, for, as will be seen, his surgical exercise, published in the June issue, comes in for a lively discussion.

General Acheson suggests that, each month, we publish the names of all those who send in solutions, with brief comment, and select one or more of the best for extensive discussion. We would be very glad to carry this out. But, that it is not practicable unless there is hearty, general and continued cooperation, requires no proof. We shall have more to say on this later.

Our esteemed collaborator, Dr. R. B. Gray, of Bay Shore, N. Y., sends the following interesting letter:

"Don't get discouraged! I am sure that the falling off of the replies is due only to other calls and not to loss of interest. Keep at the unique department, for we can in that

way learn what is bothering the ordinary man in the practice of medicine and also learn how to diagnose and treat cases clinically.

If you take notice, the cases on which opinions are asked are Live ones and, only in rare instances, are the assaults of nature so successful or the therapy of the general practitioner so illy chosen, that the patient reaches the autopsy table."

A physician in a town not many miles away from Chicago writes very interestingly. He restricts his practice to internal medicine, and, while assuring us that the Seminar has proved of great help to him, he feels too incompetent to participate in the discussions, as the cases are too difficult.

As a matter of fact, quite a number of communications have reached us assuring us of the deep interest of the writers but regretting their inability to venture solutions of the problems so far presented.

These communications form the very antithesis to General Acheson's letter, and, therefore, merit earnest consideration.

Personally, we do not believe that we can be accused of selecting difficult cases. When one or two problems really required specialistic training, we admitted it beforehand, our sole reason for their presentation being to afford those of our readers who specialize in surgery an opportunity for mental practice. As a general rule, however, the cases have been selected from the Editor's experience, and they were chosen because ability to diagnose them correctly meant a real advantage to all concerned in every-day practice.

Extremely rare cases are of little practical interest and these have been avoided. Whenever a case has been presented without sufficient data for a diagnosis, the aim was, to cause to think what it possibly might be all about, with a view of arriving through one or more means at a definite diagnosis, if humanly possible to do so. That, we believe, is the strong feature of the Seminar and, without it, the Seminar would be a lifeless piece of work.

Dr. Junger, of Soldier, Iowa, sends us a really interesting diagnosis of what is the matter with the Seminar: The boys have an acute exacerbation of chronic fishing-tacklitis and camp-hyperpyrexia. We envy those readers who are so afflicted and our only regret is that we cannot take the cure with them.

To all readers who have sent the Editor an encouraging note, the writer extends his sincerest thanks and the promise to try to merit their confidence.

Dr. Acheson's Surgical Exercise.

In the June issue, General Acheson presented a case which we recapitulate in its essentials:

A farmer's wife, aged 49, multipara, had suffered for a long time from external and internal hemorrhoids, which became inflamed. Menstruation, during the past few months, has been irregular, missing a couple of periods. The last period occurred February 1st, not reappearing up to March 16, on which day Ball's hemorrhoidectomy was performed. Five large hemorrhoids have been removed typically by the well-known method of ligature and excision.

fortable but still complaining of bearing-down pains in the back and hypogastric region, frequent and scanty urination and some headache. Beyond a little tenderness on pressure over the hypogastrium in the middle line, nothing abnormal could be detected on physical examination, which included the rectum and vagina. There was no rise in bodily temperature nor increase in the pulse rate, Uterine sedative and nervine tablets proved efficaceous, and the patient eventually was rid of her troubles. Dr. Acheson was, for the time being, rather worried about this case. Now, however, he accepts the whole situation as representing nature's attempt to restore the catamenia.

Of several letters dealing with the above case, the two following are interesting:

Discussion by Dr. R. B. Gray,

Because I differ with the Doctor presenting the case, is no argument in favor of my being right. He has the advantage in that the patient regained health under his guidance.

By way of approach and to simplify matters, I would first arrange the symptoms into past and present.

PAST HISTORY

Female, Age 49. Farmer's wife. Multipara. Difficult labors. Instrumental Deliveries. Hemorrhoids (mixed). Irregular menses (lately).

PRESENT HISTORY

Ball's Hemorrhoidectomy.
Catheterized for 3 days.
Thirteen days after operation:
Pain radiating from back.
Frequent desire to urinate.
No temperature, nor acceleration of pulse.
Urine negative.
Pain on active motion.

Fifteen days after operation:
Fever and pain.
Intermittent bearing-down pains.
Frequent scanty urination.
Temperature and pulse normal.
Vaginal and rectal examination negative.

Nothing noteworthy occurred for about two weeks following the operation, when the patient complained of severe_pain in the lower part of the back, passing round over the crests of the ilia to the hypogastrium, with a desire to micturate very often.

Physical examination, the next day of the attack, revealed nothing special, except that the patient suffered from pain in the back when attempting a movement of the body while in bed. She was given some benzyl benzoate tablets, and the next day reported improvement.

The following day, Dr. Acheson made an uncomfortable journey to the country to see the patient, because of complaint that her symptoms had recurred more intensely than before. He found his patient fairly com-

Deduction, or diagnosis: Nature's attempt at restoration of catamenia. Being a female, patient is liable to diseases of her sex.

An age of 49 suggests menopause and attendant disorders and physiological phenomena. Like the lines in "Mikado," however, being a farmer's wife "has nothing to do with the case." The history of several instrumental confinements may account for the occurrence of hemorrhoids. The irregular menses may be due to "change," or approaching menopause.

The hemorrhoids link the past with the present and were the beginning, if not the cause, of the present difficulty.

Ball's hemorrhoidectomy done under the usual technic and, I presume, general anesthesia, affords reasons for the retention of urine, for, it is almost an aphorism of surgcry that rectal operations under general anesthesia produce retention for two or three days. This leads to the bugbear of catheterization with its attendant chances of infection, or what was formerly known as "catheter fever."

Being, as I infer, still confined to the bed, and no doubt hesitating to get off her back, the weight of a large abdomen (if she has one) superimposed over the arch of her back, has a tendency to bend her back the opposite way and so produces strain and pain.

While removed by days from the anestietic, we still bear in mind ether backache; also, keep in mind kidney crisis and tabetic crisis. The best of men have been fooled by our old friend, Lues the Invisible.

Lack of temperature, normal pulse and negative urinary findings make us look elsewhere than to urethra, bladder, ureters and kidneys.

Pain on voluntary motion leads us to think of parts used in motion, muscles and ligaments attached to the spinal column.

Fifteen days after operation, the patient is said to have pain of an intermittent character, bearing down, and scanty urine. This type of pain is found in some kidney condition, such as stone; and (what is more important from a clinical standpoint, since it does not show up on x-ray,) pus and unorganized detritus can give colic. Even waxed catheters will not help in diagnosis, but they may dislodge stones and thus aid in treatment. Scanty urine may be due to lack of the best diuretic—water.

Vaginal and rectal examination is negative. There is tenderness over hypogastrium.

This is the place where the Doctor and I part company. His diagnosis is "Nature's attempt at restoration of catamenia." I disagree. I do not think that Nature would resort to all this trouble to restore a function which usually ceases at or before the 49th year. And I am led to believe that the patient got well without restoration of menstruation.

I am led to conclude that catheterization was at the bottom of the condition. Or, what is more likely if more difficult to prove, the patient may have had an ascending lymphadenitis from the rectal operation, as there is a certain amount of trauma with any operation, a breaking down of acquired barriers to infection and a chance of the introduction of an added infection. Anyway, the three chains of ano-rectal lymphatics have more work to do, become swollen and, by inference, can produce the phenomena recorded.

Of the treatment, I have little to say. We know that the recorded pharmacology of the benzyl compounds leads us to think that they affect unstriated muscles only.

Discussion by Dr. E. C. Junger

Operations for the removal of hemorrhoids are by no means insignificant surgical procedures. Certainly, the patients have much cause for various complaints following this class of operations.

It must be borne in mind that, quite often, hemorrhoids are merely the expression of some important pathologic disturbance higher up, the liver, the kidneys, the heart and even the stomach having the primary responsibility for the development of that most annoying of rectal troubles, viz., hemorrhoids.

But, even when no such primary pathology exists, that is to say, when the development of the hemorrhoids is solely due to some local cause, operations involve sufficient trauma, including sections of nerves, to produce reflex phenomena and result in circulatory disturbances which in turn cause back pressure and edema, all of which will give rise to a variety of disagreeable symptoms within the pelvis.

If there is no such complication as tumor of the uterus, laceration of the cervix or pronounced malposition of the uterus, the prognosis need cause no worry.

Editor's Note.—It has been impossible to submit the above two letters to General Acheson for reply. The discussion is still open. Indeed, the Editor desires to add a few remarks on this exercise, and the readers are urged to send in their opinions at once, to insure publication in the September issue.

A Study in Blood-Counting

A laborer, aged 48, father of several healthy children, with no other family and personal history than that, eight or nine years ago, he lived in Texas and suffered from an acute attack of Texas fever, had been under the care of a local general practitioner for some weeks. His condition becoming alarming to his wife, you are called in consultation.

The physician in charge tells you that the patient began to suffer from headaches and general malaise, and, while there were no chills, the patient had been forced to remain in bed and had lost weight. Outside of a general typhoid condition, there was nothing noteworthy, the temperature being rather high as compared with the pulse—104° against 100; respiration apparently normal numerically though rather shallow in excursion.

The physician noticed a "tremor" in the left upper abdomen and interprets this to be an enlarged spleen due to the malaria.

Your own examination shows a profound toxic condition. The tongue is heavily coated, the breath foul, the lips parched and the teeth are covered with sordes. Thorough physical examination reveals nothing abnormal otherwise. On deep palpation in the left hypochondriac region, you detect a tumor, oval in shape, apparently not connected with the intestine and, while the tumor is ill defined, it is movable to a limited degree.

A sample of urine is obtained and examination shows a trace of albumin and amorphous urates. There is no sugar, nor do you see any pus or blood cells in several slides.

The blood count, which you ordered with a view of determining a possible malaria,

shows: Erythrocytes, 4,700,000; leucocytes, 30,000, with 90 percent polymorphonuclears. Plasmodia were not found. The Widal test, too, is negative.

Requirement.—The clinical picture together with the blood report should show us the way towards a correct diagnosis. While no absolute diagnosis can be made as yet, we know the road to our goal.

Note.—This case is not difficult and, what is more important, a real one such as may occur very often in any physician's practice. A false diagnosis leads to disappointment and failure—a correct diagnosis to a cure.

The Editor desires every reader to send in his solution or idea about the character of the case. No names or only noms de plume will be published whenever such a request is made.

[Concluded from page 550.] in obtruding itself upon my consciousness.

I am not going to write a poor editorial, if I know it; so, I shall not write any, content to pass the sonnet and the thought on, certain that it will have the same intriguing effect on many of my readers. What does it make you think of?

THE STORM

THIS morning's sun rose clear and bright to greet The world and send its rays to cheer the earth. But, e'er the day was done, he met defeat And hid his face before the storm had birth.

The darkness grew and covered all the sky,
And from the west the thunder rumbled low—
'Til—full in volume, gave its mighty cry—
Then fled—turned back and struck another blow.

A strong north-easter lashed the lake to foam,
The rain beat sullenly upon the shore;
Then, suddenly—the wild wind ceased to roam,
The storm had passed—the thunder came no more.

So evening came—and with it a sweet rest Which seemed to say, the storm was for the best.

-DOROTHY ELOIS WILLIAMS.

June 5, 1923.

The General Practitioner

Talks About Professional and Personal Problems Conducted by WM. RITTENHOUSE.

The Boy and the Farm
(Continued)
I Go a-Fishing

HEN the spring floods from melting snows and April showers swell the streams bank-full, the various kinds of fish run up the creeks seeking a spawning ground to deposit their eggs. This is a time of excitement for the boy. When we had a few hours to spare, we could go spearing fish, or catching them with hook and line or net, in the lakes and ponds. In shallow streams, we even caught them with our hands when they were trying to make their way up a rapid. This spawning instinct is so strong in some varieties of fish as to be one of the wonders of nature. They leave the sea or the lakes, traveling ever up stream and surmounting obstacles that would seem to be beyond their power. They struggle over shallows a fraction of an inch in depth; they fight their way up rapids and even leap considerable waterfalls. Always pushing up and up, they surrender life rather than turn back. None of these fish ever reach the sea again; when they have deposited their eggs on the spawningground, they soon perish.

Every one knows the mild but pleasant thrill of fishing with hook and line; but few are familiar with the more intense excitement of spearing fish from a canoe at night. A torch is fixed at the bow of the boat; the fisherman stands just back of the torch with his spear ready poised in hand. A fish, attracted by the light, comes along to the surface of the water to see what it is; his curiosity is fatal to him; a quick thrust of the spear, and he is on his way to the frying-pan.

Haul In!

Another method of fishing, that has almost disappeared, is the use of the draw-scine. My father owned one and it provided us with many a half-day's sport and with abundance of food. It was six feet wide and an eighth of a mile long. One edge had a row of cork floats, the other a row of lead sinkers; the

result being that it would hang vertically in the water. Starting at a given point on the shore, we would pay it out from a row-boat, rowing in a semicircle-and bringing the other end ashore not far from the starting point. Then we would haul in at both ends and, of course, all the fish within the semicircle were doomed. At the last, it was quite an interesting sight to see the mass of struggling fish crowded together trying to escape. As they were gradually drawn up on the beach, we selected the finest and let the rest go. A single haul would sometimes yield a wagon load of fish. Most of them were bass, pike, pickerel, catfish, eels, and various smaller kinds. Great was the excitement if, as the semicircle narrowed, a six- or eight-foot sturgeon was seen fighting like a tiger to escape from the ever contracting noose. The sturgeon has great strength, but is not dangerous, as his mouth is on the under side of his body and is practically without true teeth. A large pike is a much more dangerous antagonist to deal with, as his large and powerful jaws and sharp teeth make it necessary to use circumspection in giving him his death-blow. The sturgeon has one feature of his anatomy that interests the boy; nature has given him a solid nose that projects several inches in advance of his mouth. This nose is of cartilage, so far as I know the most elastic substance in nature. Many a time I have whittled this cartilage into a round ball which would bounce several times as high as a rubber ball of the same size.

Sheep-Quiet, Fond and Few

From corn-planting in May to having in June was a time of comparative rest for the farm boy, although our fathers had a way of finding some occupation to keep us out of mischief, such as picking stones, cutting weeds, repairing fences, and the like.

This was also the season for sheep washing and shearing. For the washing, we sometimes built a dam across the creek that ran through the farm. I believe every boy loves to build a dam and, when space permits, to

construct a water-wheel below it. When the water was low in the creek, we drove the sheep a mile or so to a pond where the water was deep enough to take a sheep into it instead of washing them in a vat or tub filled from the creek at home.

There is a peculiar property about the oil of a sheep's wool or that of his body. It can be cleansed in plain water without the use of soap. One can take a sheep that has been accumulating dust and dirt in his fleece for a year, until it is difficult to tell a black sheep from a white one; one can plunge him into a pond or creek, squeeze his wool with one's hands over and over again, until finally his fleece is so white that his own mother would not recognize him, and all without a bit of soap. There must be some peculiar property in the oil that makes it soluble in water. I have often assisted in killing a sheep, and then washed the grease from my hands in plain creek water without a particle of soap.

If the weather was fair for three or four days after sheepwashing, the sheep were dry enough to begin shearing. The shearer squatted on the barn floor, took a sheep in his lap, and proceeded to "undress" him with the oldfashioned sheep shears, beginning at the neck. The modern clippers, whether operated by hand or power, are a great improvement on the shears, both as to speed and safety. A sheep's hide is very loose, and it takes some skill to avoid clipping off pieces of skin with the shears, while the clippers are protected. A shearer's skill used to be judged by the number of bleeding spots he left upon the patient creatures. If these spots were numerous, he was sure to receive a shower of sarcastic remarks from his comrades or from the boss. He was informed that it was easier to skin a sheep after it was slaughtered. The poor sheep had to grin and bear it.

The Rank Green Corn.

In June, it required active work to keep down the weeds in the corn and potatoes. The boy early learned to use the hoe and, when these crops were worked with the horse cultivator, the boy sometimes had to ride the horse to guide him; for an untrained horse would trample the growing crop. After some experience, most horses learned that they must not step on the plants. Horses vary in intelligence just as people do; some learn with a quickness that is almost uncanny not to step on the crop, while others are so stupid that the idea of stepping between the rows instead of upon them seems never to enter their heads.

The Fragrant, New-Mown Hay

About the 20th of June, haying usually began, bringing new experiences to the boy. If he was small, his task was to carry water to the thirsty workers in the field, and usually something besides water was carried in a black bottle. On all special occasions of work requiring unusual expenditure of physical energy, it was supposed necessary to supplement the natural forces of the working man by moderate additions of "old rye" to the pure, cold well water which was the ordinary drink on the farm. Haying, harvest, threshing, hog-killing and wood-sawing were some of the occasions when the black bottle made its rounds.

Caught in the Act

I recall a little adventure that always comes back in my memory when my mind runs on those days. I was too young to help handle the hay, but old enough to carry "water and" to the men at work in the hayfield. I had never tasted the contents of the black bottle, though often wondering what it was like; but my inquiries had been met with the assertion that it was not good for boys.

One hot morning, I had just carried cooling drink to a group of men who were "turning" the partly dried grass to hasten its curing. To keep the water as fresh as possible, I had set the tin pail and the black bottle in the shade of a tree in a fence corner to wait for the next round. I sat down on the grass beside it and divided my attention between my little dog and the birds, bees, and other live things that happened to be about. The men were working down the field and, consequently, had their backs towards me. Suddenly, the thought occurred to me that this would be a good chance to find out what "brandy-wine," as we called it, tasted like. I glanced at the men-they were all facing the other way. I raised the bottle to my lips -but I had failed to consider what a fool dog might do. Just at that moment, he barked-I never knew at what-perhaps at my unusual attitude. At any rate, he barked, and the men all looked up. I was caught. One young fellow who taught school in winter and worked on the farm in summer and who was rather proud of his smattering of Latin, said I was a corpus delicti, and the name stuck to me for a long time. He meant that I was caught in flagrante delicto, but he had got mixed in his Latin. Whether he was right or not, I am sure I never felt so guilty in my life. The story of my betrayal by my dog was passed around to the family and the neighbors, affording them much amusement and costing me much humiliation and many secret tears.

The Swish of the Scythe

Haying in those days was not the simple affair of today, when every part of it is done by machinery. Although horse mowers were in use to some extent, many of the fields were so obstructed by stumps and boulders that a scythe was the only practical instrument for cutting the grass, and a hand rake the only means of gathering up the hay. Today, the grass is cut with a horse-drawn mower, tedded by a horse-drawn tedder, raked with a sulky rake and, as the wagon is driven along the windrows, the hay is loaded with a patent loader and is even put into the mow by horse power. In fact, instead of doing all this laborious work by hand, the farmer spends his time in riding comfortably about the fields on the various machines.

Swinging the scythe was rather hard work for a boy, although, when he caught the knack of it, it was easier than it looked. Mowing with a scythe left the newly cut grass in a windrow which had to be tedded, or scattered, to promote drying. This was work for the boy, and so was raking when dry.

From Sickle to Self-binder

When harvest set in, a couple of weeks later, the same obstacles in the fields prevented the use of reaping machines, and consequently much of the grain had to be cradled by hand. This is hard work, hard enough for the very strongest. The man who can swing a cradle in the July sun all day in stout wheat, is a prodigy of muscular endurance, Even binding sheaves after a cradler is too hard work for a boy, and so is pitching the sheaves on to the wagon or the mow. In fact, all harvesting is heavy work and this is why machinery has so completely taken the place of muscle in the modern harvest field. The steps in this development are interesting. From the sickle to the modern harvester is a long succession of inventions. First, primitive man grasped a handful of the ripe grain and cut it off with his hook-shaped sickle-a slow process. Next came the scythe, which was more rapid but had the disadvantage of leaving the straw tangled. So a light wooden frame was attached to the scythe, and, behold, a cradle which laid the stalks down straight and ready to bind. Then followed the horsedrawn reaper, very clumsy and crude at first, a man with a rake walking behind to pull off the bunches or sheaves; then the man rode on the machine; next, the machine did the raking off; and when, at last, the machine tied the sheaves and cast them to one side out of the way, it was thought that perfection had been reached. But soon the machine cut off only the heads, leaving the straw standing, and finally the machine threshed the heads, and dumped off sacks of clean wheat, instead of sheaves that were seven-eighths straw. All these inventions have made farm life a very different affair to the farmer's boy.

The Flail Is Obsolete

After harvest came threshing, and to the boy this was chiefly an interesting "event," because most of the work was too heavy for him. He liked to watch the machinery, and he enjoyed the increased number of workmen, partly because the meals were better than usual (the chickens being levied upon), 'and because, the more men the more fun.

Cherries Ripe!

One pleasant feature of the midsummer days was the cherry harvest. The boy could indulge his propensity for climbing by helping pick cherries; or he might be kept busy frightening off the birds, who were inclined not only to eat their fill, but, what was more important, to spoil far more fruit than they ate, taking a bite from one cherry and then passing on to wound another.

We got considerable amusement from the various devices we used to fool the birds. We put a scarecrow made of old clothes stuffed with straw into the cherry tree. At first, the robins and woodpeckers were deceived and kept their distance, but they soon learned that the figure was harmless, and even perched upon it to show their contempt. But, when we fastened a stuffed owl or hawk in the tree, their terror was comical to see. Sometimes the leaves were so thick that a robin found himself quite close to his old enemy before he discovered him. The scream of terror and the quick escape was fun for us if not for the robin,

After the main crop of cherries was picked, the "scatterings" that were left on the trees were claimed by us as a source of pocket money. We picked and dried them, and there was always ready sale for dried sweet cherries.

Becoming a Capitalist

The satisfaction felt in earning pocket money by our own efforts must be experienced to be appreciated. The boy who gets an "allowance" or who begs dimes and quarters from an indulgent parent has no real idea of the pleasure of feeling rich. Larger sums, won in after life, fail to give the pleasure of the dimes really earned in boyhood. When I

was eight, I had accumulated 27 cents and felt the need of a purse. After much searching at the village store, I bought a pretty bronze leather purse with steel snap, for 25 cents. My brothers and sisters made merry over the idea of owning a 25-cent purse to hold 2 cents; but I said "Just you wait." I had plans in mind. The next summer, the laugh was on my side, as the little purse grew heavier as a result of planting corn, hoeing for a neighbor, doing errands, selling cherries, berries and nuts. When, in October, I sold several quarts of chestnuts, the little purse was well filled, and I loaned some of it to my father at six percent interest, feeling the satisfaction of having an "investment" instead of having spent it on trifles. It was a lesson in industry, thrift and economy that could not fail to have its value in after life.

The Glorious Fall

After threshing, the fields were prepared for sowing with winter wheat early in September. Then the corn had to be cut and husked, and the pumpkins hauled off the cornfields and piled under the shelter of an apple tree near the barn. Hauling home the golden globes and later watching the gusto with which the cows devoured them was all pure pleasure, and so was drinking the rish, yellow milk resulting from them.

On reflection, it seems to me that no other time of the year can afford the boy on the farm as much pleasure as autumn. The apple and peach harvests were one long-drawn pleasure increased by the glorious, golden sunshine. The winter apples were carefully picked by hand to avoid bruising, packed in barrels, and stowed in the cool "barn cellar" for the joy of the long winter months. Whoever has never inhaled the fragrance of a barn cellar has missed something. In fact, one of the charms of autumn on the farm is the variety of fragrant smells exhaled by the various gifts of bountiful nature. One could write an article on the fragrant smells of autumn, but the trouble would be that it could only be appreciated by those who had inhaled those perfumes on the farm itself.

Then there is cider making-a whole article could be written on it and the way it may be done and should be done. It is today a lost art, but fifty years ago-what a delight! There was sweet apple cider for apple butter. sour apple cider to be clarified for winter evening entertaining; there was also "hard cider"-vile stuff, wrecking many a life, but rejected by most farmers. I would give a good deal to quaff once more a cup of "sweet" cider-not one sour apple in it-and to inhale the various fragrances of an old-fashioned wooden cider mill. Such a mill was one of the most simple and yet ingenious contrivances ever made by man. It could be built by a wood worker with very simple tools, and yet was most marvellously adapted to obtaining the results for which it was intended.

I think the boy who has followed this article will admit that life on the farm may have some interesting features.

2920 Warren Ave.

UNITED FRUIT COMPANY: REPORT

United Fruit Company. Medical Department. Eleventh Annual Report. 1922.

One of the recent innovations made by the United Fruit Company, in August 1922, was the inauguration of a free medical radio service and consultation of its hospitals and steamships and all ships at sea. This free medical service was established primarly for the benefit of ships not carrying doctors. However, in case of need, ships' doctors may consult by radio with the United Fruit Company's doctors, either abroad or ashore.

Like its predecessors, this latest annual report of the United Fruit Company, Medical Department, is extremely interesting in many ways, especially to physicians having to deal with tropical diseases. The medical service was constrained, in the course of its activity, to utilize the lessons of preventive medicine, especially with reference to tropical diseases, the results of which are splendidly evident in the tables contained in this report.

It is well known that this company maintains several beautifully-constructed and equipped hospitals with efficient medical and nursing service. Employes are treated in these hospitals rather than in their homes or quarters, as would be the case very often in northern latitudes. The value of exercising careful supervision over the health of employes, from an economical as well as a humanitarian standpoint, is self evident.

In the report, there is enclosed a pamphlet containing a brief review of the digestive functions and food requirements for the maintenance of health with particular reference to the tropics, by W. E. Deeks, M. A., M. D.

Let's Talk it Over

Active-Principle Materia Medica

With Physiological Effects and Therapeutic Suggestions By WM. T. THACKERAY, M. D., Fowlerton, Texas

[Continued from July issue, page 512.]

Mercurous Iodide

Physiological effects:—Analogous to that of the Biniodide of Mercury, but milder; produces diarrhea before salivation.

Therapeutics:—Used in the same class of cases as the Mercuric iodide, but in larger doses and with less fear of mercurialization.

Dosage:—1/4 grain three or four times daily to effect. The drug should be discontinued when catharsis occurs, or else the dose should be reduced.

Morphine Muriate

Salt resulting from the chemical action of hydrochloric acid and morphine, one of the alkaloids of opium.

Physiological effects:-In small doses, the first phenomena observed are the excitement of the circulation, evidenced by a fuller and quicker pulse and by an increase of heat and by flushing of the periphery of the body. This period of excitement, which may be more or less durable according to individual idiosyncrasies and the amount of the drug absorbed, is followed by fullness of the head, giddiness, ringing in the ears and, frequently, nausea. Deep-seated epigastric pain is often felt, and loud borborygmi occur. The vertigo may be such as to render locomotion unsteady, staggering, or the upright posture impossible. Injection of the conjunctiva and contraction of the pupils occur at the same time that the cerebral effects are felt. The lips have a bluish appearance, the mouth and tongue become dry, the voice is husky, and deglutition difficult and painful. When these physiological effects are produced, pain and spasm are relieved, a sense of happiness permeates the individual and either somnolence (which is the most common), or wakefulness, with intense mental activity, is experienced. The sleep is frequently unrestful and disturbed by dreams and visions, with difficult awak-

The respiration is slow, noisy and labored,

and the cardiac beats are lessened in number, but the pulse is harder.

The mucous membranes and the skin, at first dry, are afterward moistened by perspiration; itching of the nose or of the whole body is felt. The after-effects (headache, nausea, vomiting and dizziness) occur in the majority of cases.

Therapeutics:—Indicated in all neuralgias, nervous irritation, incipient inflammation. Frequently associated with Hyoscyamine, for it is seldom that pain is isolated from spasm. Also useful in catarrhal affections accompanied by mucous hypersecretion.

Dosage:—1/64 to 1/12 grain may be given every fifteen minutes until sedative effect, in connection with either Atropine or Hyoscyamine if required to control spasm.

Morphine Hydrobromide

Salt resulting from the chemical combination of Hydrobromic acid with Morphine, the principal alkaloid from opium.

Physiological effects same as Morphine Hydrochloride.

Therapeutics:—Specially indicated in meningeal inflammations.

Dosage:-1/64 grain repeated every fifteen minutes until effect.

Morphine Sulphate

Physiological effects and therapeutics: Same as given for Morphine Hydrochloride.

Dosage:—1/64 to ¼ grain, repeated as may be necessary. The ¼-grain single dose should rarely be exceeded.

Muscarine Sulphate

Salt resulting from the combinations of the alkaloid of Amanita Muscaria (Fly Fungus) and sulphuric acid.

Physiological effects:—In small doses, promotes abundant perspiration (second only to Pilocarpine), lacrimation and increased secretion of the glands of the Schneiderian membrane, and of the saliva; though the latter, not infrequently, lacks activity in the presence of the hypersecretion of the sweat glands. The pancreatic, biliary and intestinal mucous

secretions are increased, as well as peristalsis. The cardiac and respiratory actions are slowed. Topically on the eye, it is myotic; otherwise administered, a mydriatic. The urinary secretions are lessened, but the urine is so loaded with the eliminated drug that a series of intoxications will be produced with this fluid transmitted from one animal to another. Its toxic power undergoes only a slight decrease after its passage through several.

Therapeutics:—Indicated in catarrh, catarrhal jaundice and constipation due to torpidity and insufficient intestinal mucous secretion. In incipient pulmonary congestions and pulmonary hemorrhages, its power of contracting the capillaries of the lungs renders it a useful agent, although not so effective as Atropine. It is also useful in the night-sweats of phthisis, diabetes, and to arrest the secretion of milk.

It has many other indications in common with Atropine, which are, however, better met by the latter.

Dosage:-1/250 grain every half hour until effect.

Myricoid

Concentration from the myrica cerifera (wax myrtle).

Physiological effects:—Small doses stimulate the vegetative system of nerves, aiding digestion, blood making and nutrition. In larger doses, it is a decided gastric stimulant. (Lloyd).

Therapeutics:—Indicated in profuse mucous discharge, gastrointestinal catarrh, atonic diarrhea, typhoid dysentery, atony of the cutaneous circulation, full oppressed pulse.

Dosage:-1/6 grain to 1/3 before meals.

Napelleine

Alkaloid from Aconitum Napellus and other varieties of Aconite. (Monks Hood).

Physiological effects:—Besides its action resembling that of Aconitine, but in a lesser degree, it possesses valuable hypnotic properties, to be utilized instead of opium and chloral.

Therapeutics:—Indicated in the same cases as Aconitine, and also in conditions of wakefulness, mental excitement and allied states.

Dosage:-1/500 grain every hour until effect.

Neuro-Lecithin

This product is an ester of the stearic, oleic and palmitic acids with glycerophosphoric acid in chemical combination with choline.

Physiological effects:—Stimulates body growth. (Danilewsky). A general nutritive tonic (Sollman). As an organic phosphorus

body, Lecithin assists nutrition powerfully by constantly diminishing the elimination of phosphorus from the body. Lecithin is a powerful bioplastic and morphogenous agent modifying favorably the organic changes of the organism.

Therapeutics:—Indicated in phosphaturia, marasmus, arrested growth or development, sexual debility, and in all neurasthenic conditions, loss of tissue and chorea.

Advantageously used in connection with Nuclein.

Dosage: - 1/2 grain three times daily between meals.

Nickel Bromide

Physiological effects:—Like other bromides, this sedates the functions of the brain, dulls the sensibility of the faucial mucosa, and allays irritability of the sensory nerves. It sedates sexual functions without destroying desire, rendering erection impossible. A like influence is exerted on the ovaries. The reflexes are sedated, the motor power is diminished and vascular tension relaxed. The heart is slowed and weakened, but not so much as by potassium bromide. Very large doses slow the respiration and lower the temperature.

Therapeutics:—Cerebral fullness and irritability in children are relieved by a few small doses, but as these usually come from some more or less irritating substance in the alimentary canal, a dose of castor oil (although less pleasant) is undoubtedly more rational and effective. (Waugh and Abbott).

A well-tolerated antiseptic and nerve tonic, especially valuable in some forms of epilepsy. Combined with Sodium Arsénate or Gold Bromide, it gives excellent results in neurasthenia, hysteria, the vague nerve-storms of the climacteric, etc. (Waugh).

Dosage:—1/6 grain, one to three, three times daily. In epilepsy, 1 grain should be given two to four times daily, to effect. The drug should be stopped or the dose materially decreased if hardening of the gums, fullness of the head, or rise of temperature occur. (Waugh).

Nuclein

Procured from live cereal germs.

Physiological effects:—When administered hypodermically, nuclein promptly produces a rapid increase in the number and activity of the leucocytes. This increase varies somewhat with the subject and the disease from which he suffers, but in all cases there is a most decided augmentation. The polynuclear cells are particularly affected. The administration of nuclein has been shown to increase the

bactericidal power of the blood many fold.

The effect of a dose passes away in from thirty to forty-eight hours, hence the necessity of continuous administration. Care, however, should be exercised not to overwork and thereby exhaust the cells. In some cases, the exhibition of large doses at longer intervals is better than the continuous use of smaller doses. (Waugh and Abbott).

Therapeutics:- Indicated in all cases of infection of the system as well as in all anemic and chlorotic conditions. If given by the mouth, it is necessary to give it on an empty stomach and to give no water, so as to secure quick absorption from the buccal mucous membrane and the stomach. In phthisis, its administration is followed by a prompt fall in temperature and a general amelioration of all symptoms. Indolent ulcers take on a new aspect, and, as granulation progresses normally and rapidly, are soon healed. In typhoid fever and other diseases where marked deficiency of leucocytic action is evident, it is an excellent adjunct to all modes of treatment, and the worst of these will produce better results with nuclein than the best without it. In malarial dyscrasias, in intestinal and gastric difficulties and, in fact, in all forms of disturbed metabolism and, therefore, faulty cell repair, this agent should be used freely. The list, if carried out, would thus embrace all conditions of lowered vitality, the acute infections, such as diphtheria, tonsillitis, typhoid fever, typhus and all of the exanthemata, most disorders of the liver and all the diseases of the skin. (Waugh.)

Dosage:-When a rapid and marked leucocytosis is desired, the dose should be 10, 15 or 20 drops and be repeated every three or four hours. If, however, the general tonic and sustaining effect of nuclein is desired, the dose should be small, 5 drops being the maximum, and this should be given not oftener than three times, or better, twice, a day. Nuclein should not be taken within an hour of eating. The best time is, when the stomach is most nearly empty, as absorption is more rapid and there is not the probability of chemical change taking place. When the digestive function is active, there is an undoubted loss of effect. It is best to hold the nuclein in the mouth to be absorbed thence directly.

Papayotin (Papain) An enzyme from the unripe fruit of Carica Papaya (Pawpaw)

Has the advantage over Pepsin in its nonliability to form cadaveric alkaloids.

Physiological action:—A digestive which has the power to soften or digest fibrin or albumin, either in the presence of an acid or an alkali.

Therapeutics:-Useful in the same class of cases as pepsin.

Dosage:-1/6 to 1 grain, after meals.

Pepsin

An enzyme prepared from the lining membrane of the stomach of animals used for food.

While there are some objections to the use of Pepsin in some quarters, the usefulness of it, in selected cases, is unquestioned. To be given when indicated with a few drops of dilute hydrochloric acid.

Dosage:—One grain directly after meals with water, preferably hot.

Physostigmine (Eserine) Salicylate

The salt of an alkaloid obtained from the ripe seeds of the physostigma venenosum. (calabar bean).

Physiological effects:—It depresses the nerve centers and kills by paralyzing the respiratory center. Consciousness is intact after the respiration is gravely affected and the muscular force weakened.

Muscular twitching occurs, and the irritability and power of the muscles are increased by moderate doses. The respiration is at first faster, then becomes slow and weak. Small doses slow the pulse and raise vascular tension, larger ones slow the heart still more and the pressure falls. The action on the heart is direct, not through inhibition.

In the spinal cord, it destroys power of transmitting impressions, produces paralysis of the muscular fiber, striped or unstriped, and stimulates the secretory system, chiefly the action of the alimentary mucous glands. Topically, it destroys the contractibility of the muscular fiber when applied to the muscles, and contraction of the pupil when applied to the eye.

Therapeutics:—Instilled into the eye, it is used in certain diseases of this organ, e.g., wounds and ulcer of the cornea, and, from its lessening intraocular tension, it is used in glaucoma and staphyloma. It removes the dilatation of the pupil and paralysis of accommodation, after the use of Atropine and, alternately with the latter, breaks down adhesions after iritis. The strength of the Physostigmine solution is generally 2 grains to the ounce of distilled water. Internally, it is useful in constipation due to atony of the intestinal muscular fibers, with scanty glandular secretion. Also, in chronic bron-

chitis and pneumonia with scanty expectoration, and dyspnea due to weakness of the bronchial muscular fibers, in muscle wasting from paralysis, in diseases of the nervous system, such as locomotor ataxia, general paralysis and writer's cramp. Also in tetanus.

Dosage:—1/1000 grain, one or two every hour until effect, passage of flatus or catharsis; stopping if pulse softens markedly. Maximum safe single dose, 1/30 grain.

[To be continued]

DR. BRYCE'S TALKS

An Accommodating Rectum

Many years ago, I was called to see a man who was suffering from an accident, both peculiar and amusing and which illustrates to what an extent the rectum may be abused and escape any real injury. The party was a workman in the city gas plant who had undertaken to give himself a general washing up with a bowl of water, in his room, before putting on his clean clothes for a Saturday night's lark. He had about finished his ablutions and started across the room to empty his bowl into the slop jar, when he stepped upon a soapy spot and, as his heels flew from under him, he held on to the bowl and landed squarely upon his naked buttocks. By some strange chance, there happened at that exact spot the upturned body of a wooden tumbler from which the foot had been broken and its bottom trimmed to a perfect acorn point, which struck him plenum sed in the bull's eye. It was driven into the rectum and beyond the sphincter as cleanly and completely as if it had been shot in by a mountain howitzer of old Confederate fame, for the tumbler reminded me very much in size and shape of one of those little shells that Stuart's Cavalry served with his "Horse Artillery."

To properly appreciate the ludicrousness of this case, I must give my first impressions as the messenger called me in person. I lived in an old-style, two-story, long-bodied house sitting far back from the street, so that, when I was called at nights by anyone who knew where my bedroom window was, on the second floor, it more often happened that they would stumble around among my rose bushes and call me from the yard than ring the bell for me to come down. This was in the good old days before electric bells and speaking tubes, when the sleeping doctor was aroused by stamping on the porch floor, pounding on the front door or "hollaring" from the front yard. It was warm weather. I had retired after a very busy day and was suddenly aroused by a loud yelling under my window and a stumbling about among the shrubbery and flower pots in the yard. I observed three or four men looking up as I raised the window and, upon asking what was wanted, was told that I was needed in a hurry "across the branch" to see Jimmy Jones, who had met with an accident.

They seemed to be a little tipsy and very much excited, and their hailing "from across the branch," a questionable quarter of the town, didn't impress me over-favorably towards Jimmy Jones, so I asked:

"What is the matter with the man?"

"Doctor, is there any ladies in hearing?" the spokesman queried.

"What has that got to do with it?"

"It has got a whole lot to do with it."

"Well come up here close and tell me," I said.

As I leaned my head out of the window, he approached as close as he could to the side of the house and cupping his hands to his mouth he said, "Jimmy Jones has got a tumbler up his firmament."

"Got what?" I exclaimed.

"A tumbler."

"Now, here, you get off at once, this is no time of night to be playing smart with me, I'll have you locked up if you don't be off at once," I shot at him.

"Fore gawd, Doctor, I'm telling you the honest truth—the tumbler is up that and out of sight and still traveling up and he is holding it down in his left side to keep it from going on up into his stomach. You see, it didn't have no bottom, but was trimmed peaked—it was a wooden one," the poor fellow explained.

It dawned upon me what might have happened, and I went as much for curiosity as for any aid I might have been able to render him

Upon arriving at the scene of disaster, I found a young white man lying upon the bed, minus all clothing but an undershirt. He was on his back and drawn up, holding his hands down over his left iliac space. He was frightened almost to death, and about a dozen of his frolicsome friends, thoroughly sobered by the unexpected occurrence, were standing solemnly around his bedside.

As had been reported, I found that the wooden tumbler had traveled beyond the rectum well up in the sigmoid and, but for his holding it there, would have been carried much further under the air pressure from be-

hind. I made an assistant hold the tumbler in situ until I had elevated his hips and thrown up several ounces of sweet oil, and then manipulated the offender down into the rectum and within reach of my straight forceps, with which I finally delivered him of a full-term tumbler which, under his strenuous expulsive efforts and my own traction, left the rectum with a report equal to that of a pistol. The thing measured four inches in length and two and a half in diameter and, strange to say, left him practically uninjured with the exception of a slight hemorrhage and a temporary paralyzed sphincter, which practically cured him of a mild case of piles.

I told this "tumbler tale" of mine at a gathering of medical men, some years after its occurrence, when my friend, a Dr. Sim, an editor of a medical journal of Tennessee, now long since dead, related an experience of his somewhat similar but more serious in results. He said that, early one morning, he was aroused by the violent ringing of a milkman's bell at his front, accompanied by loud yells for his help. Looking out, he observed a man prancing around and holding a bell behind him and ringing it frantically. At a loss to understand the continued ringing, and noticing a crowd of milk customers gathering with their pitchers and buckets around his front gate, he rushed down and admitted the frantic bell ringer. He found that the man had the handle of a big brass bell driven its whole length up his rectum and held so firmly by a spasmodically contracting sphincter that it was impossible to pull it out.

It seems that the man was driving a restless horse and that, while standing up to pour out a customer's milk, the horse started off suddenly, throwing him back violently upon the seat upon which rested the bell. Unfortunately for him, his anus was in the wrong place, or the bell handle was, and bad luck made a pot shot and drove the big wooden handle up his rectum plumb up to the hub. In this condition, the poor fellow ran fully two blocks to the doctor's office unwillingly ringing his bell at every step.

This case was not so fortunate as my own, for Dr. Sim had to chloroform his patient to break the grip of the angry sphincter and, later, to perform a serious operation to repair a badly damaged rectum.

These cases are unusual, but they demonstrate the tolerance of the rectum to great violence with the minimum of permanent injury. In other words, it possesses the ad-

vantages of most remarkable accommodation under adverse conditions.

516 N. 10th St., Richmond, Va. C. A. BRYCE

OUR HOMEOPATHIC FRIENDS OBJECT

Your publication has always appealed to me as being fair and unprejudiced; but, please, tell me what have the Homeopaths recently done to you that you should publish as a "Leading Article" the unfair, unwarranted, unprovoked attack on the Homeopath that is contained in the article (June, page 391), on "Some Present-Day Medical Problems," by Dr. Edward H. Ochsner?

I would like to ask Dr. Ochsner a few questions: If Homeopaths are quacks and frauds, just why are they urged to become fellows of the American Medical Association along with honest men like yourself? In what subject or subjects in medical education are Homeopaths lacking? Are they afforded a shorter course or less study or training than the graduates of your socalled "regular" colleges? Are they granted any different state board examinations (excepting in the sole subject of materia medica) than "regular" graduates? Is their preparation for the practice of medicine in any way less "standard" than the preparation of old-school students?

My own information is to the effect that our training and education is IN EVERY WAY equal to that of the old school, in fact IDENTICAL with that of the old school, with the exception of the one subject of materia medica, in which our way is better.

Dr. Ochsner's article is so full of misstatements that about the only way to answer it correctly is, to say that practically every statement made about Homeopaths and Homeopathy is untrue. His entire article reflects prejudice and ignorance of his subject. He goes back to 1842 and finds that Oliver Wendell Holmes knocked Homeopathy. If he will look further, he will find that every truth yet discovered, whether in medicine or in any other science, but especially in medicine, has had its knockers. He can dig up some mighty clever articles making a big fuss about Jenner's vaccination, antitoxin for diphtheria, and in fact, about everything that has been new and good in medicine. . . .

Homeopathy is the truth in medicine. It is an exact science. It will endure when all other schools of medicine are forgotten. So don't worry about us, Doctor, Homeopathy is used to some extent by a large percentage of the internists in this country and Europe without regard to what school they graduated from. We use it in our own families and we save a larger percentage of our fever patients than was ever possible with the old school system, Homeopathic physicians have brought out and demonstrated the value of many drugs never before used by any school but today used extensively by all schools, Bryonia and Pulsatilla being notable examples. . . .

The Homeopath of today knows as much about general medicine and the action of drugs as the regular does—sometimes more. He rejects nothing he finds valuable and condemns nothing because of prejudice. Does this indicate fraud or quackery?

H. H. J.

One of the first articles I read was that by Dr. Edward H. Ochsner. After reading it, I wondered where Dr. Ochsner had made his study of Homeopathy; when in actual practice he had carefully tried it out to demonstrate its fallacy; where I could find published the recorded data upon which his conclusions were based. Or, were his conclusions based on the fact that it is part of the religious creed of every old-school graduate to heartily hate Homeopathy and all that pertains to it, to fight it to the last ditch, and by fair means or foul to stamp it out root, branch and all? It deserves no investigation, it merits only death; as does any heresy.

Of course, Dr. Ochsner is right; for, he belongs to the majority school, and the majority is always right. They admit it and, so, do not have to prove it.

There are men who have graduated in medicine who are now specializing in röntgen therapy, there are others who are specializing in radium therapy, others who are confining themselves to surgical therapy, others to electrotherapy. Yet, I see nothing in his article to the effect that they are monorail minds, vicious quacks, and doomed to death. then, if a graduate in medicine should choose to specialize in internal medicine and, in the selection of his remedy for a given case, follow the law of similars (which is being followed in vaccine therapy, in tuberculin therapy, in diphtheria active immunization, in endocrine therapy, in homostimulation, and is unconsciously and certainly unintentionally followed in much of the medicinal therapy of the regular school) why is such a man a blackguard, an enemy to humanity and civilization; why is his profession to be attacked without investigation and his school to be harassed and fought to the bitter end without quarter?

Never can I be persuaded that it is the love for humanity that prompts this, but only the bigotry that burned heretics in the Middle Ages. It cannot be a question of ignorance concerning the Homeopaths, for, our schools will compare favorably with yours in curriculum and requirements.

Dr. Ochsner rants about the cults and the number of people who are flocking to them. Could it be that the people are driven to the cults by loss of faith or by sad experience with regular physicians, and that perhaps the best way to combat the cults might be to look for the faults in one's own practice rather than to publish bitter diatribes about the cults?

I'll grant that, after putting in four years in a university and four years in a class "A" medical school, then serving in a hospital and in the medical corps before beginning to practice, it is somewhat disconcerting to me to see a local boxer disappear for a few months (I do not recall just how long, but for a period so short that his friends hardly knew that he had left town), then suddenly to turn up as Dr. X, Chiropractor. But, I can assure you that the general public, while they laughed when they saw about it in the paper, would have shed but few tears at my plaint, had I been so foolish as to come out with a statement that my love for the dear people compelled me to protest against their being imposed upon by such an incompetent. I might have had faith in my sincerity, perhaps I might have convinced some members of my family and a few of my brother physicians, but the dear people, whom I was trying to protect-well, you well know what they would say about the money-grabbing pill-slingers and butchers who are only jealous of the professional and financial success of the chiropractors.

So, I have long ago decided that my mission is to help people keep well and to restore to health the sick who come to me by whatever therapeutic means my judgment indicates as being best, even if it be a remedy selected according to the homeopathic principle. I have found that my mission is not to knock and consider as unworthy of even investigation every therapeutic principle other than hemopathic prescribing.

E. B. J.

Magazines that publish articles like Dr. E. H. Ochsner's, do so at some little risk: The risk of receiving a storm of protest.

Of course, there is another way of looking at it. A man who will write an article of this nature ought to be beneath recognition by sound-minded and logical persons, and therefore comment should be unnecessary. But the article has been written. It is beneath recognition. Yet, because it has been written, and because it will be read, it behooves someone to call attention to it, lest the misguided, misinformed or simple minded who read will believe.

One might pursue a lengthy discourse to show wherein the article is erroneous; even point out its falsities step by step, and withal tell the reader, besides, the real truths which he should know. However, it is hardly worth the while. For, those who know what the writer does will know for themselves just what an infinitesimal value the article possesses. Those who do not know, need only be told this: If the man believes what he says then his knowledge of the subject matter is indeed faulty.

The article itself is only fit for the waste basket. It does not even offer the redeeming feature of stimulating constructive comment or criticism.

. F. N. R.

You may drop me into your waste basket, but, nevertheless, I for one wish to thank you for publishing "Some Present-day Medical Problems" by Dr. Edward H. Ochsner, Chicago, Ill. Tell the Doctor for me to write another one; but, some way, get this article to the old M. D.'s of California. I am sending you a clipping from the "Evening Herald" of yesterday. I should have attended this blow-out last night, but didn't see it in time.

[The clipping refers to graduating exercises for the class of 1923, Los Angeles College of Chiropractic, in which 36 candidates received the degree of doctor of chiropractic; 16 were created doctors of naturopathy; 14 were graduated as philosophers of chiropractic (whatever that may be), and masters of chiropractic degrees were given to 5 candidates. Truly, an impressive shower of academic (?) honors; one that might fill the simple old M. D. with envy if he had not long since learned to value any doctor degree only according to the school by which it was conferred.—ED.]

For many moons, I have found that, the less I take notice of these quacks of old California, the less I advertise them; for, every "dog will have his day." If I am called into a

case with them, I go, for I wish to see what they do. . . .

B. M. S.

[Regarding this whole discussion, read the editorial on page 546 of this issue of the Journal.—Ed.]

A COUNTRY PRACTITIONER AT-TENDS THE A. M. A. CONVENTION In San Francisco, June 26, 1923.

On the morning of June 25th, 1923, I arrived in San Francisco and, after being comfortably domiciled in one of the leading hotels, I wended my way to the Civic Center, to the Great Auditorium, one of the attractive features of the Golden City.

There were numbers of men standing around. Along the corridor, were several booths with large printed placards in view. Some of the strange inscriptions represented the names of the various secret fraternities which seem to be a necessity in almost all medical schools.

Looking for and unable to find a familiar face, I found myself lost in the shuffle. Small groups of medical men, here and there, were exchanging pleasant greetings and hearty well wishes, as much as possibly doctors can. Finally, at one booth, I asked where I could sign the general register. I was told to go to the left.

One standing at the end of a building that comprises several blocks, and being told to go to the left, is apt to wander around considerably. This is precisely what happened. Nor was I alone, as I met others who also were going left, until, no doubt, in pity for the stranger in a strange land, an onlooker pointed the way, directing me to the table of signatures.

Years ago, as a boy, I remember quite well going to a Sunday school picnic; the meal was made ready on a very long table. When the signal was given to eat, each boy made a run, and it was a case of each grab for himself. Well, there I stood, alone in a Medical Fortress, waiting for the opportunity to place my name on the distinguished list. Finally, a chair was emptied. I made a jump for it. Not any too soon, though, as at my back was a big, square-shouldered Texan (as I learned afterwards) ready to spring. However, he graciously acquiesced when he saw my compressed physique slip in ahead of him.

The attaching of my signature to documents has caused me much disturbance in the past and, many times, great anxiety in my medical career. Consequently, I have formed a habit of shrinking or even trying to disappear, whenever I am accosted with the request for my hand-writing. Nevertheless, after giving the executive staff of the A. M. A. my name, address, and purpose, I was forced to read that six dollars must bid me farewell before I could gain a seat in the Medical Sanctum Sanctorum.

Years ago, I was a subscriber to the A. M. A. Journal. But, being just a country practitioner, I presume I failed to appreciate some of the extensive, elaborate articles of scientific research. Therefore, I lost hope and gradually laid it aside, until I was suspended for non-payment of dues. Right here, I faced a dilemma: The journal, a fellow, six dollars, and get in; or, no journal, no fellow, and six wheels for the show. Which? I decided on the former.

I stood in line for a long time anxiously wondering whether my credentials would be accepted, as all I had on my person was a receipt card from my State Society, showing that they trusted me. However, it went through without a quiver, and I was awarded a medal, a book, and some pamphlets; the medal to be worn during my stay in San Francisco, and the book, "Medical California," published in a very elaborate style, to be read at my leisure—probably one of the best things of the convention.

Not knowing just which section to choose, as they "all looked alike to me" (the general practitioner, especially the rural type, has need for everything), I crossed on the section of Internal Medicine.

Early on the opening morning, I was on hand, clothed in a receptive mind and armed with a note book. As I sat through the long three hours, I wondered just how much bigger I would be when I arrived home. Subjects were discussed which some may seldom meet; however, they were quite learned and, no doubt, very scientific.

After the reading of some of the papers, if one wished to jot down a few notes, they probably would read something like this: "Yon can draw your own conclusions," "It is very evident," "A certain percent of cases respond," "It is a significant fact." However, fearing it would be "Love's Labor Lost," I decided to improve my memory instead of wearing out my pencil.

Since that opening morning, I have been given cause to wonder whether or not it would not be wise for some of the members

to study the art of the development of the human voice, particularly 50, as this has an important place in therapeutics. In fact, I believe that, by adding to the by-laws of the institution, that a diploma showing one to be fully familiar with its use, and that it must be a prerequisite, before one is allowed to speak, would not only greatly enhance the value of the papers, but would also improve the digestion, and perhaps the disposition of some of the listeners.

On my way through the exhibits, I saw many features of interest. Among them were many mechanical appliances that seemed sound and worthy of investigation. Also, it is a well-known fact that one skilled in the use of them may get some surprising and happy results.

As far as I could judge, the convention was a success and it certainly showed that considerable thought and effort had been given to make it attractive; a great deal of credit is due to those who sponsored it. Just what each man got out of it, was up to him. At least, one had a trip, and one was able to see other men who had come from various parts of the globe.

As to the individual's increase in therapeutic knowledge by his having attended, I will leave that for the reader to answer. However, The Journal, which will later follow the trail, will no doubt throw light on some of the dimly illuminated discussions.

"Like a plank of driftwood Tossed on a watery main, Another plank encountered, Meets, touches, parts again; So tossed, and drifting ever, On life's unresting sea Men meet, and greet, and sever, Parting eternally."

SYDNEY TALBOT.

Nevada City, Calif.

TREATMENT OF SEPTICEMIA AND PYEMIA.

Our treatment of septicemia (also of pyemia) regardless of the source of infection, puerperal or other, has resolved itself into little more than opening and draining what foci of infection might be apparent and available to the knife, and 2-way rectal injections of soda water. Any description of the former procedure in this place would be unnecessary. The latter is easily carried out by means of a "Beck's tube." The metal tube is well vaselined, as is also the anus, and it is best in reference to this latter, that the well-vaselined

index finger of the operator should first be inserted into the rectum, thus determining the exact direction and making the subsequent insertion of the tube a matter of greater ease, both to the physician and patient. In young children, while the same tube may be used, it is of especial importance to first ascertain the general direction of the rectal canal for the first five inches; for, in the event that the rectum takes a sharp sigmoid or other curve, it may first be necessary, before attempting to introduce the tube further than that point, to allow some solution to run from the enemacan through the tube, thus bulging the rectal canal in front of the tube-end and permitting its further introduction to the hilt.

The enema-can, which usually holds 2 quarts, is suspended at an elevation but little above the level of the rectum. Unless there is in the case some element which contraindicates that position for the patient, the latter usually lies supine, the escape-tube conducts the waste water into a receptacle at the side of the bed and which commonly lies on the floor. The soda water enema is allowed to run sometimes for several days and nights, almost continuously, the strength of the solution being 35 Grams of soda bicarbonate to the quart of water. A greater or lesser strength can be used.

Frequently, the flow of the solution through the tube is continued for 3 hours and then discontinued for the same length of time. It should, however, be kept up until not only the gas is removed from the bowel, which condition, we know, favors the development of a fatal ileus, but also until such time as the fever shows signs of great abatement, and runs continuously at much lower levels.

We have used this treatment in a good many cases of pyemic and septicemic infection, and have yet to regret having used it in any case or to learn of any plan of treatment giving greater promise of success, regardless of the severity of the case, or the nature and source of the infections. Pressure within the bowel causing discomfort to the patient and ejection of its contained solution is never a matter over which either interne or physician need worry, as, at just the moment when any pressure threatens to become uncomfortable to the patient, the distention of the bowel-wall is promptly relieved by the escape tube.

The best diet seems to be a glass of milk every hour, although buttermilk or hot broths may be used instead.

Of the drugs which I would depend upon and for which we usually find indications, the

most prominently useful are, the salicylate of soda in 5 or 10-grain doses, every 2 or 3 hours; formin, in 5-grain doses every 6 hours with soda and, later in the case, tonics of iron, quinine and strychnine.

I shall be glad to hear from those using this plan regarding their results.

We have in this treatment rather a fact than a theory. Yet, I have theorized that the action of the soda, where absorbed into the blood, is antiseptic as regards the germ life therein, and chemical as regards the acid toxins.

J. A. DUNGAN.

Greeley, Colo.

A PUZZLING CASE

Can any of your readers throw any light on the following somewhat puzzling case?

On June the 10th, I was called to the confinement of a farmer's wife, aged 33, primipara, always strong and healthy, period of utero-gestation uneventful. Delivery took place at 7:30 p.m., after a perfectly normal labor of five or six hours; without forceps, anesthesia or any form of narcotic. child, a 7-pound boy, was, to all appearance, absolutely normal, strong and vigorous. The cord was tied with a ligature that had been recently boiled and kept in strong chlorazene solution. The third stage of parturition was properly completed, the mother made comfortable and the babe again looked over, while being washed and dressed. There was nothing to suggest even the suspicion that everything was not just as it should be, and everyone was happy.

As these people lived fifteen miles distant from me, and had a reliable nurse, I did not consider it necessary to pay any more visits, especially as they were in direct telephonic communication with my office, and, I may add parenthetically, my fee was paid before leaving. Instructions were given that the baby was to be put to the breast at intervals of 5 or 6 hours for the first two or three days, and then nursed regularly when lactation became established. Other than this, nothing was to be given the baby, except a little boiled water occasionally.

Next morning, I inquired by telephone how mother and babe were doing, and got a most satisfactory report. On the following day about noon I again inquired, and was told that the baby did not seem quite as well as he had been; the only symptoms they could give me were, that apparently he was weaker and had occasional spasms of pain or, at any rate, that he cried as if in pain, and he seemed not to want to take the nipple. I was informed also that his bladder and bowels had acted, a copious discharge of meconium having taken place. I suggested giving him some hot water containing a few drops of brandy or peppermint, thinking there might be some gastric flatus from attempts to nurse, and to let me know the result a little later.

Between four and five in the afternoon, I was again called and informed that there had been no improvement, but that he was evidently weaker and appeared to be sinking. I went at once to see him, and he certainly seemed to be acutely ill. There was nothing in the history, from the time I had left him, two days before, to give any clew to the cause of his present condition. His temperature in the groin was 97.5, and neither respiration nor pulse was accelerated; heart action good. His cry at intervals was weak, and was accompanied by the appearance of lines and creases, extending from the alæ nasi to the corners of the mouth, At times, too, there were twitchings of the facial muscles and evelids; but, in the intervals, the countenance was calm, the face smooth and the eyes closed as if in sleep. I had him completely undressed, and made a most careful examination. There was not a sign of anything wrong from anterior fontanelle to toes, except that the skin of the face showed a faint yellowish tinge over the nose, upper lip and cheeks, suggestive of icterus neonatorum, and there was some tenderness over the liver; at least, light pressure there evoked a cry. The urine stain on the diaper was more yellow than usual.

My tentative diagnosis was some congenital disease of the liver, but, whether merely functional (or perhaps, I should say, temporary), or organic, I could not then decide. I gave, however, a rather unfavorable prognosis.

Before leaving, I administered a dose of castor oil, and had the nurse prepare some barley water, to be given in small quantity at intervals when not asleep.

Next morning, I was informed that death had occurred at 5:30 a.m., fifty-eight hours after birth, quietly, without pain or struggle. During the night, the oil had acted freely, the movement apparently natural.

I gave my opinion on the death certificate that death was due to congenital disease of the liver. Was I justified? Unfortunately, there was no autopsy.

GEO. ACHESON.

Kingston, N. B., Canada.

[In the absence of an autopsy report, it is to be feared that a diagnosis of this puzzling case will never be possible, and that one man's guess may be as good as another's. It seems quite evident that there was some trouble in the liver; but, what? Let's see what our readers may have to suggest. The case is sufficiently interesting and potentially important to cause us to put on our thinking caps. What is your diagnosis, Doctor, and why?—ED.]

TWO UNUSUAL CASES

Many years ago, just before starting on my morning round—I was still engaged in general practice—a couple was shown into my office.

The husband stated, they had called in reply to repeated requests for a settlement of his bill which he did not propose to pay; and, further, if I pressed him for a settlement, he would promptly enter suit against me for malpractice, claiming that the treatment given his wife, prior to the birth of his last baby, was responsible for its frail, delicate condition. They had but little hope of raising it. He admitted that he was acting upon legal advice, following the assurance of his family doctor to the effect that the "wrong treatment of his wife was undoubtedly responsible for the frail state of the infant."

They were a very ignorant couple and, in consequence of this fact, I knew that it was useless to enter into the merits of the case. With a quick step to the door, I opened it and ordered them to get out while there was still a chance to walk. The language used was so convincing that it not only caused much surprise but prompt action, without comment.

From the viewpoint of this wise trio, who knew nothing of the facts, things looked very much their way; but this happened to be a very unusual case. Unfortunately, I have no records to consult; however, the main points are still very clear.

This man's wife first came to me complaining of much pain over the left ovary. Being unable to find the cause, I insisted upon a vaginal examination and found a long rope of thick, offensive pus, about an inch of which was visible. With uterine forceps, this was removed. It was about three inches in length and as large as my forefinger. She expressed prompt relief but still complained of a sense of fullness and discomfort, A soft rubber catheter was then wrapped with gauze, cautiously and gently passed up along the track

which this rope of pus occupied for about eight or ten inches, and withdrawn with a twisting motion. Another plug of pus followed and, immediately, a large quantity of thick pus of foul odor mixed with small blood-clots came away. Gentle pressure on the abdominal wall was used until this discharge ceased, when she expressed herself as absolutely comfortable.

She called weekly for about six weeks, when she complained that the discomfort was returning, though not so severe as before. The gauze-covered catheter was again introduced and withdrawn, and a large quantity of pus passed, but there were no blood clots; the odor was slight.

I admit, it was a very risky thing to attempt, but it was plain that there was room for this thick, tough, long plug of pus to pass down, partially through the os, and that by very cautious manipulation I might be able to dislodge what remained. It was app to me to give this woman relief. I afterwards learned that she never had a return of the trouble.

So much for this case.

Mrs. T., who had frequent attacks of dysentery and had been under the care of half a dozen doctors for more than a year, was thoroughly well after a few weeks treatment with intestinal antiseptics and hyoscyamine, while living upon a suitably selected diet.

A few months later, she married. Some months after, I was engaged to attend her in confinement. Labor progressed normally until just before delivery, when the pains became suddenly extremely severe, with great expulsive power. Before the lapse of the usual time for the expulsion of the placenta, it came with tremendous force, along with what for the moment appeared to be gallons of blood. It was then discovered that the uterus had been inverted; but prompt attempt to replace it, failed. She was pulseless, bathed in a heavy perspiration, and too near gone for further effort to replace it. Brandy and coffee improved her immediately.

She left her bedroom in about a month and was soon able to look after housekeeping and her boy, but she could not decide to have the organ removed, for ten or twelve years. The surgeon who did the operation invited me to be present. The uterus was completely inverted.

This woman soon grew quite stout and strong and regretted that she had not acted upon my advice, many years before.

B. D. B.

does not give us far more complete information regarding the details of his first case. What did he see on adjusting the speculum? Or did he not use one at all? One might almost believe that he did not make a vaginal examination by inspection, but that he inserted that gauze-covered catheter through the undilated vagina. Of course, there was a severe endometritis. How greatly the left ovary and the tube were involved, we have no means of guessing. We should have employed more active treatment; certainly swabbing out the uterine cavity, possibly curettage. However, as said, we do not have sufficient information on the case to form an opinion.—En.]

[It is unfortunate that our correspondent

PERIODIC EXAMS

A cutting from today's (July 6) New York Times may interest you as being a fine example of the methods adopted by the many different fake cures and socalled cults in having the audacity to publicly challenge the knowledge and ability of the medical profession for the sake of the free advertising obtained, which has its monetary value by catching those persons who think so little of their health and bodily welfare as to follow any kind of advertisement to its lair.

The trouble with the physicians of today is, not, a want or lack of knowledge or of keeping abreast with the times as far as progress in medicine is concerned, but, lack of aggressiveness in urging and proclaiming their rights as guardians of the health of the people.

In these days, when a new religion or a mental cure for broken limbs can be started on a prosperous career if well advertised and crazy enough to suit the mentality of persons who are either ignorant and should be protected from these commercial enterprises or are of the very common genus lamb, species sucker, following each other as sheep will do and who really need a watch dog and a shepherd to look after them. These are the easy marks who fall down and worship every new cureall advertisement in the lay press of the "come on and be skinned" variety.

The medical professional today rests upon the sure foundation of scientific truths, but there is no reason why the truth should be hidden under a bushel while ignorant fakes of all kinds prosper by the modern methods of advertising for their customers.

If truth is to prevail, it must be blazed out from the house tops. The medical profession should openly make war upon all unscientific fakes in the interest of the public health of which they are the logical guardians.

EDWARD SWALLOW.

Mount Vernon, N. Y.

The clipping is reproduced below:

What Will Doctors Say to This?

"It is not to a convention of those who practice the art called osteopathy that anybody naturally would look in search of valuable suggestions, but one has been made by a delegate to the convention of such practitioners, now going on in this city, that is at least worth some consideration. It is to the effect that every doctor and surgeon should be subjected, once in five years or so, to an official examination for the purpose of determining whether or not he has kept reasonably well up with the progress of medical science.

"That is a proposal both novel and interesting, and supporting it is the fact that the doctor who does not acquaint himself with the fast-following discoveries of his professional colleagues and of the investigators in the biological laboratories cannot give to his patients the improved treatment which those discoveries make possible.

"That the hard-worked physician in general practice has time to learn all there is in modern medicine, hardly could be claimed; but it can be expected of him that he shall read at least a few of the better journals devoted to his profession, and shall be able to send his patients, in case of need, to specialists of greater powers than himself in their particular domain.

"That an osteopath should be demanding from doctors broad and up-to-date knowledge, is distinctly amusing. The source of a suggestion, however, does not always determine its intrinsic value. Army and navy officers are obliged to take periodic examinations, and failure to pass any of them stops promotion or even results in retirement. Doctors, too, are soldiers in their way—the defenders on whom we depend for protection from the deadliest of enemies—and why should it not be demanded that they maintain competency as well as acquire it in their student days?"

[Are osteopaths to be exempt?-En.]

SOME HINTS ON RECTAL DISEASES

Possibly, there is no class of ailments to which the human body is subject, that is more universal than are the various diseases attacking the lower portion of the alimentary canal.

Certainly, there are none that occasion greater discomfort without actually laying the patient up; and, certainly too, there are none which are so often concealed from even the family physician.

This latter fact is due, of course, to the knowledge on the part of the laity that operative procedures in and around the rectum are not universally successful, that much suffering is entailed thereby, that recurrences are seen in a considerable percentage of such cases, and that injuries to the sphincter ani, with a most distressing line of sequelæ, occasionally follow.

Each one of my readers, I am sure, can recall to mind several patients among his own clientele who ought to have something done to relieve them of trouble in the rectal region, but who will not consent to an operation.

It is just such a condition of affairs that first directed my own attention to rectal work, and that led me to make a somewhat exhaustive study of the subject.

At the very outset, I noticed several inconsistencies, or what seemed to me to be inconsistencies. One of these was the fact that, whereas I saw many cases of chronic catarrhal inflammation of the rectum without any attendant troubles, such as pruritus, fissures or hemorrhoids, I never saw a case of any one of the latter conditions without more or less indications of a preexisting chronic inflammation, or a proctitis as it is commonly called. When one considers the etiology of such an inflammatory condition, he easily understands the connection between the two pictures.

What is proctitis, meaning the chronic form of the trouble? It is a catarrhal condition in the lower bowel that is very similar to such a condition in any other portion of the anatomy; the nose, for instance. Now, when we have a chronic catarrhal condition in the nasal passages, what do we find? Congestion and inflammation, first and foremost. Then, later on, unless there be a real atrophy of the mucous membranes, an excessive secretion takes place. But, there is this difference. In the rectum, this secretion may or may not be discharged into the lumen of the bowel. If it is not so discharged, then it may follow down the long axis of the rectum between the mucous membrane and the underlying muscular layers, or it may penetrate through these layers, along the direction of the fibers.

In the one case, we get a constant moisture of a more or less acrid nature about the anus, which may or may not be apparent to the

patient. But, whether he notices it or not, there is a change taking place which occasions much local irritation, due to the constant maceration of the tissues. In the other case, we get, for a long time, possibly, no subjective symptoms at all. He may or he may not have an occasional outbreak which is characterized as "an attack of piles." When he experiences one of these, he goes to his family physician and is given some sort of a suppository (one containing opium, we'll say), and then promptly forgets all about the disturbance. But, the process is going on just the same. It has not stopped just because the transient distress is gone. It is not asleep, by any means.

If there is no discharge into the lumen of the bowel, what then? What is the pathology under those circumstances, and how may it give rise to three so widely dissimilar conditions as pruritus, fissure and hemorrhoids? Just the same pathology that follows similar conditions elsewhere; but with this difference, that these changes are less apparent in this locality owing to the scarcity of sensory nerves in the rectal region. We get the classical symptoms of rubor, calor et dolor, redness, heat and pain.' But marked lesions may take place before the patient is aware that anything has happened. There is no discharge from the rectum, yet, there may be a leakage or oozing through the skin adjacent to the anus, which the patient always ascribes to perspiration. He will emphatically deny that there is any discharge other than that.

An examination will show in many cases that there are tender areas around and about the rectum; and frequently these areas can be detected by the eye. Again, oftentimes, one may see a faint bluish or purplish line connecting these reservoirs, or pockets. Where these reservoirs are located beneath the mucous-membrane coat within the lower bowel, we get the beginnings of many cases of hemorrhoids. These pockets and canals are filled with the same more or less acrid discharge that we find when it is thrown directly into the lumen of the bowel.

When we examine the anus itself, we find the following typical condition in pruritus; a raw, rugous, moist anus with the radiating folds macerated in their deeper portions; and over all, the marks of the finger nails. Once seen, it is never forgotten.

As to Treatment

Now, what does the average man do for such a condition? I leave it to you to answer. Is it ordinarily successful? Again I'll let you

make your own reply. If not, why not? Because no accurate knowledge of the underlying conditions is had.

A line of treatment which does not contemplate the evacuation and obliteration of these pockets and canals has always been considered by thinking men as little more than palliative. This involved a surgical procedure, opening up and thoroughly draining and cleansing the entire cavernous tract. Very recently, however, my attention has been called to the possibilities vested in another line of treatment which is apparently giving me fine results.

I allude to the radiant energy which appertains to sunlight. If we are to believe physicists, all sunlight may be divided into three divisions, so far as it relates to the spectrum; viz.:

7% violet rays, which lie above the violet end of the spectrum and are invisible to the human eye,

13% visible rays, within the spectrum, and 80% infrared rays, down below the red end of the spectrum, which again are invisible to the human eye.

Now, several years ago, Danish and German investigators proved that, other things being equal, the longer the wave length, the greater the penetration. This contention is borne out by the results obtained with the ultraviolet rays, the waves of which are exceedingly short; for, we find but very shallow tissue penetration. On the other hand, such men as Thedering, Gerstenberg, Nagelschmidt, Dodge and Sonne all admit and declare that the infrared rays are deeply penetrating.

Being deeply penetrating, these rays lead all others in regulating the action of the circulation. So, I was first led to try their effects in a case of pruritus ani where there was but a minimum of submucous canalization. And, much to my surprise, I got good results. Then I tried it on another, more typical, case with equally good success. And I have since employed it satisfactorily in about thirty cases. Whether or not this success will continue, I can only surmise. But this I do know, that each patient, on whom it was employed, was loud in the praise of the comfort it gave.

Fissures of the Anus

So much for pruritus. Now a few words about the second condition, fissures. What are they? Many good general practitioners seem to experience difficulty in differentiating between fissures and various other quite dissimilar complaints. This is due, no doubt, to the small attention that is given to diseases of the rectum in our medical colleges, and to the

faulty equipment possessed by the average man for examining these patients.

A fissure is a crack; nothing more nor less. It occurs usually in the posterior wall of the rectum, low down, though it is sometimes seen laterally. It is brought about by the softening and degeneration of the mucous-membrane coat of the bowel by the acrid secretion already spoken of. The exciting cause, of course, is traumatism, either from straining, the passage of a hard, dry stool, or some similar condition. As time goes on, the edges of the fissure naturally become elevated and reddened. The patient complains of excruciating, cutting pains commencing immediately or a few minutes after defecation and lasting oftentimes for hours.

The treatment may be either medical or surgical, palliative or curative. Cauterization with pure phenol will oftentimes cure up these cases, if they have not been of too long standing. Dilatation of the sphincter under anesthesia is always exceedingly helpful, and will often effect a cure when all other expedients fail. The injection into the bowel of a small quantity of sweet oil, fifteen or twenty minutes before going to the toilet will give great relief in many cases by coating over and thus protecting the raw surfaces. Another fact, which is almost universally overlooked in fissure cases, is that a formed stool, if not hard and dried, causes much less pain than a liquid one. The reason is obvious; yet, most practitioners try to liquefy the stool in all such cases.

Hemorrhoids

And, now, for hemorrhoids. These are variously designated as internal and external, inflammatory and non-inflammatory, arterial, capillary and venous, connective-tissue, cutaneous, hypertrophic, thrombotic, redundant and varicose piles. Of these, the venous, thrombotic and connective-tissue varieties constitute the external piles; the rest, the internal ones.

But, whatever the variety, from whatever exciting cause, the remote cause is inflammation. As has been said before, proctitis can generally be shown to have been the forerunner of all these cases. When the mucus, due to the inflammation within the rectum or inside its walls, becomes lodged beneath the mucous membranes just above the internal sphincter, we get little pockets or mucus sacs. These swell and become the foundation for the future pile.

The location of these sacs and their depth below the surface determines the variety of the pile. If but the outer layer of the mucous membrane covers them, we get what is known as the capillary variety. But, if the sac is more deeply placed and two or three layers are superimposed, we have what is known as the arterial pile.

Fresh hemorrhoidal tumors are generally bright-red in color, but the redness fades with age. If there is a varicose condition present, they present a bluish or purplish color, depending upon a greater or less amount of constriction. The color of all varieties of piles is intensified when the tumor is protruded through a tight sphincter ani.

Of external piles, the differentiation is made in the same general way. Cutaneous piles involve the skin and cutaneous tissue, while venous piles are those in which the veins play a large part. Thrombotic tumors are generally merely secondary stages of the venous variety, and are due to the breaking down of these engorged blood vessels with an extravasation of blood into the surrounding tissues.

As to the treatment, This again may be curative or palliative. Under the latter division, where there is no strangulation, the chief indication is the overcoming of constipation and the securing of free, copious, soft stools at least once and better twice a day. To accomplish this, oftentimes requires a great deal of painstaking work on the part of the attending physician. Purgative waters, socalled "salts," aloes, jalap, the various proprietary "pills" together with most of the other cathartics are irritating to the mucous membranes and thus aggravate the conditions they are intended to relieve. Enemas are always taboo, because they tend to force the lining membranes downward. A glycerine suppository is oftentimes beneficial if inserted half an hour before going to the toilet, as it lubricates, and prevents irritation. AbilenA water, though it contains a small amount of the sulphates and bicarbonates of various salts, is permissible, if required. It is best administered in doses of 1/2 to 2/3 wineglass before breakfast. Cascara sagrada is generally valuable, and compound licorice powder is very satisfactory. Albright recommends the following for rectal cases:

M. Sig. Teaspoonful before retiring, increasing or diminishing as may be required for 1 or 2 easy movements a day.

The condition of the liver and portal circulation should be watched carefully and any-

thing tending to increase the engorgement avoided.

Rich foods as well as all articles containing a large amount of waste material should be avoided. So, too, should stimulants, whether containing alcohol, caffeine, theine or condiments. Bran, contrary to the general idea, is absolutely harmful in many cases. And all coarse foods had better be left alone. Finally, care must be taken not to overeat of even the simplest and plainest foods.

When the hemorrhoids are inflamed or protruding, put the patient to bed and apply ice, either externally or internally, in small, well-rounded pieces or introduced into the rectum enclosed in a rubber condom. But, be careful not to leave the ice, however applied, too long in situ. Remove and replace in a few moments if necessary. The cold may be followed by astringent lotions or ointments. Also 3 or 4 ounces (not more) of a cool saline solution may be thrown into the bowel, as required.

If there is a protrusion, or prolapse, reduction can usually be brought about without much trouble by gentle, steady pressure and a small amount of lubrication. Having the patient assume a knee-chest position will expedite matters. A 10-percent solution of cocaine applied to the parts on gauze strips, followed by adrenalin applied in the same way, will often accomplish wonders. When the mass is reduced, put the patient into a bath as hot as can be borne. For after-treatment, hamamelis externally and the specific tincture of collinsonia internally will prove very valuable as a routine prescription.

So much for palliative treatment. In a curative way, the knife, the cautery, the ligature and the electric needle all have their advantages and their disadvantages. When a patient refuses operation, or where an anesthetic is contraindicated, electricity, if used intelligently and with proper technic, will cure a large proportion of the cases. It takes considerably longer, but it is devoid of pain and causes no laying-up from business. It is the means I employ in a large number of my patients; and it gives me as great a percentage of cures as does the classical Whitehead operation. Moreover, the patient suffers no interference with his ordinary occupations of life. The reason why so many men fail in their use of electricity in these cases is because of faulty technic and through routine following of textbook directions. Most if not all works on the subject recommend the positive pole for this purpose and tell of dire results following the negative application. Yet, I use the negative pole in practically all my cases and can absolutely disprove the authorities in this regard. A minimum of current may be used, not to exceed 10 to 12 milliamperes, and no discomfort results.

So far as fistulas are concerned, they still are cases for the surgeon alone and, so, will not be discussed here. A later article, after further experimentation with a method I am employing for the use of light-therapy in these cases, will give the results of these experiments, and may possibly add a valuable instrument to the armamentarium of the general practitioner.

ALBERT FRENCH STORKE.

Chicago, Ill.

STRANGE OBSTETRIC CUSTOMS

My 1st Obstetrics in Colombia

One a. m. about 4 o'clock, three women called me to ask assistance for a primipara, who had been in labor so long that all were discouraged. As she was only a block away, I went barefoot and bareheaded.

In the room, was a bedstead of wood. They use scarcely any bedding here and usually sleep on the *ground*, but this room had a board floor. Bedding is usually a mat, like a jap mat and, if any cover, the lightest blanket obtainable; sometimes, a raw cow hide instead of the mat.

Preparations for accouchement: A mat on the floor, with an old dress skirt over the lower end. The woman wore a gown only. I don't suppose any bathing had been done for several days.

I had soap and water to wash my hands. Then, during the next pain, I made a vaginal examination. Head low down L. O. A.; waters unbroken, broke during examination. I thought everything right and gave a dose of Caulophyllin. Had pituitary, but it was like the Jew's promissory note (too old!).

The woman was lying on her back with her head in an old woman's lap, while the midwife squatted between her legs. I told them that, unless things went badly, I'd do nothing but go to school by watching them. So I sat on edge of bed and watched. Another woman, toothless, was waiting-by for the others. The mother was also in the room.

After only three or four good pains, the child came screaming into the world. No attention was paid to the contraction of the uterus. I was watching closely. Then, without any washing of hands, one of the women said, "Well, let us take a drink on the big

boy." Another one produced a bottle and a cup and all but the patient partook of the aguardiente (cane rum). I refused. They brought the patient a cup of chocolate, but a pain came. She got to her knees, and the midwife received the placenta. Then came a ten-minute hunt through the trousseau, for string to tie the cord. Meanwhile, they changed gowns for the patient, removing the old skirt with baby and placenta downward and putting a fresh mat under her.

Then the midwife tied the cord once. There followed a hunt for the shears to cut it. After it was cut, she tied the stump a second time, handed the child to her assistant who wrapped it up, while the midwife cut the customary umbilical patch. During all this time, the only light was a tallow dip candle, out of way at the foot of the bedstead on the floor. When the patch was given to the first assistant, the second brought the candle and, when the cord had been properly placed, the first took the candle and dropped hot melted tallow to cover the cord well, then wrapped it up as is usual.

The midwife rolled placenta, skirt and mat together and No. 2 carried it away.

A cup of hot black coffee was served me. The patient drank her chocolate. Some fruit was brought for me to take home, when I left, having been gone just two hours.

The father did not show up, but, on the fourth day, my landlady asked me for my bill, saying that she would collect it. In a few minutes, she handed me the amount.

A Trying Obstetrical Case

I was spending a week on a cow ranch, some miles from town, where they gave me fresh milk in a big silver mug, four or five times a day.

At daybreak of the sixth day, there came a messenger from town telling me that a woman had been in labor already four days and nights, and would probably be dead by the time I could reach her.

I found a II para, undersized, but in good health previously. Nothing abnormal in first confinement. Midwife and others said that the child was alive. I differed. Gave a full dose of morphine and scopolomine. One hour later, I repeated, ½ morphine, and two hours after that, half the first dose. The head became engaged but would not advance with much speed. Finally, I gave another half dose of the first remedy.

After thirteen hours, I began chloroform, giving it myself. Soon, it required a woman at each arm and one for one leg, while the

midwife managed the other. The patient had long before abandoned the bell-rope plan and was on her back on the earthen floor, with a single thickness of coffee sack as a mattress.

When the head was born, the stench was almost unbearable and, after birth of the body. there came a great gush and spurt of the most foul smelling fluid imaginable, striking the midwife on both arms. Another woman was leaning near looking at the infant. All four were smoking cigars, but these two immediately turned their heads and vomited. Still, neither left her post, one making a grab for the uterus as I had instructed. Someone passed a bottle of rum and a cup and all took a "horn." Somebody called for egg and charcoal to make the placenta come quickly. A raw egg with one end broken, part of contents being thrown out and replaced with powdered charcoal.

They got the patient to her knees while I watched proceedings. They got most of egg down her, but the effect was unsatisfactory. So, they separated a lock of her hair about as large as a finger and crammed it into her mouth telling her to swallow it. It must have stuck, for no effect was evident. The placenta wouldn't budge. Now, they called for a hen's wing quill to tickle her throat, but she chewed up the quill. They were in despair, and then I came into the game and passed a finger beside the placenta, which fell into my hand. The smell was bad, but someone had brought some live coals and put some cotton rags on them to change it. Probably thirty persons were outside waiting the word she was dead. When I came from the room, I was pushed, crowded and congratulated from all sides.

The priest had come in, after the first five or six hours, to learn about Caesarean section. I told him that it was no use; the child was dead and, with patience, the mother would be delivered.

The baby's skin was considerably macerated, proving that death had occurred some days before.

When I gave antiseptic powder, to use for bathing the vulva, they said, it was their custom to apply a scorched cotton rag, and not to wash until the third day. I told them that this was a rotten case and, to save the woman, they had better do as I told them. They did, and she recovered.

A Third Case

Last week, I was asked to send medicine to force the birth of the child in a primipara (18 years), in labor 3 days and nights. I couldn't do it but went to see about it. The trip occu-

pied eight hours, three men poling the canoe for return trip.

I found a strong, healthy woman; vertex presentation, face down, head fast, but not advancing. Hadn't urinated for more than two days. Complained much. Wanted relief of bladder worst of all. I told them that I could not pass a catheter because of the head pressing against the symplupis pubis. I tried, but failed. Having no hyoscine, morphinecactoid, gave a full dose of morphine and scopolamine at once, after 2 hours, 34 of the first dose, and 2 hours later 1/2 dose. Good effect resulted in every way, except in that most desired, advance of the child. Here, instead of the obstetrical harness, they tie a knotted rope to a rafter or joist and, standing or kneeling, pull like an old sailor.

The woman was in great fear of a torn perineum and seemed determined not to let the child pass. I could not get her to lie down, but she would hang to the rope and keep her knees close together, or sit clear back on edge of bed or a box.

I made the trip down at night and was quite tired. After seven or eight hours, I lay down outside her room. In about an hour, her husband came from the room, crying, he said that she had burst herself out behind; the baby was dead and his wife dying. I went into the room and found her hanging to the rope, her knees tight together, and a woman holding her hand tight over the hind parts to keep the intestines from falling out.

Now was the time for me to force something. We forced her to the ground, on a raw cow hide. Then I used chloroform, but it required one person for each limb (five in all) to manage her till she relaxed, then I went after her. By pressure on the uterus during pains and with the finger in the anus (which had not quite torn through), I reached the chin and, in about 15 minutes, a boy squalled (not a dead one). Now, when the body was completely born, I could not get legs. Feeling nothing wrong but short cord, I gave a half-turn to the body, placing the head on the vulva of mother and went after the legs. There was no trouble now, but I had to lay the child crosswise, while assistants held her legs apart, so that I could tie the cord.

So far neither mother nor child was dead and nothing was torn, either. I thought I'd give plenty of time for the placenta to loosen and come away. So, I went out to wash my hands. Now came the funny part.

When I returned and the pains came again, she rose to her knees and grabbed the bell

rope again. I found only a couple of inches of cord protruding, but a strong hemp cord was tied to it, and I had taken time to tie only once before cutting. The placenta came away readily and clean. She lay down and said, "Loosen my foot, somebody." I followed that hempen string backwards and found it attached to her foot. It had been put there during my absence from the room. What for? Custom.

Then some one said, "Now the urine?" The husband took a small gourd vessel and stepped out and urinated into the gourd (I didn't see how much) and offered it to his wife. One of the women said, Drink it and get well quickly. Before I could think of anything to say, it was gone. (Can you beat that?)

There was no way for me to return for two days; but, when I left everything seemed in good order.

GEO. MOTT.

Calamar, Del Napes, Colombia, S. A.

CANCER Cause and Treatment

Cancer is a cell formation, made up by blood corpuscles that have been arrested and have not functioned for six months or longer. When arrested for a short time, blood corpuscles will degenerate into pus and, when arrested for a long time, they degenerate into cancer cells.

If a splinter of wood penetrates the tissues of the body, and remains, the corpuscles of the blood will be arrested there, and, in a short time, will degenerate into pus. The splinter is removed and the sore heals.

A man in the cancer age, past forty, smoking a clay pipe irritates his lip. This irritation arrests the corpuscles of the blood, producing a congestion noticeable by a redness and slight swelling; occasionally discharges a little pus. This is a benign sore. However, he continues irritating the part with the stem of his pipe for six months or longer, and then the congestion changes into a lump, which is slightly sensitive on pressure.

The corpuscles of the blood, having been arrested, not having functioned for a long time, have degenerated into malignant cells. The sore is now a malignant one.

It is impossible for any physician to tell the exact time when a benign sore becomes a malignant sore. It may be compared to day merging into night. No person can tell the exact time when day ends and night begins;

for, there is a twilight.

This cancer is now local, and, if every cell is removed by operation, either medicinal or surgical, there will be a radical and permanent cure. If not removed, the trouble may at any time become more than local. By manipulation or pressure exerted on the cancerous mass, some of the cancer cells will be forced into the blood current and will circulate in the blood until they are arrested somewhere in the system where the circulation is slow, as is the case in a lymphatic gland or in a cicatrix.

If the cancer is removed by operation, the wound will heal and form a cicatrix. In time, there will be swelling and soreness in the cicatrix and, upon examination, a cancer will be discovered forming in the cicatrix. The malignant cells, floating in the blood current, were arrested in the cicatrix, and corpuscles of the blood, arrested and coming in contact with these cells, will degenerate into cancer cells in a short time.

The growth or multiplication of malignant cells continues until the malignant growth becomes so large that the central part is without any circulation, through pressure. Then the cancer cells degenerate into a sanguineous pus which escapes from the growth. As the growth enlarges, the flow of pus becomes more profuse, and this gradually drains the blood of its corpuscles which are the lifegiving power of the system.

The growth is now large, involving surrounding tissue and near-by lymphatic glands. It has gone wild in diverting blood corpuscles into cancer cells, and, in due time, the person dies a frightful death from exhaustion.

What I have said of cancer of the lip, will apply to cancer in other parts of the system.

A person in the cancer age has an ulcer in the stomach which continues for some months. The corpuscles of the blood, having been arrested for a long time in the congestion which the ulcer caused, have degenerated into malignant cells. They form a tumor in the wall of the stomach which may be recognized by palpation. If the malignant cells are not removed, the process of the growth will gradually sap the strength of the person, causing death by exhaustion.

A woman's mammary gland, in her cancer age, comes in contact with the hard stays in her corset, producing a slight contusion which results in a small lump. The lump persists for some months. Blood corpuscles are arrested in the congestion and do not function for a long time. They degenerate into malig-

nant cells and the benign tumor is now a malignant growth. If not restored by a surgical or medicinal operation, she will have a dreary and painful period of life of two years or less, when merciful death will relieve her.

It is easily recognized, in cancer of the breast, that cancer cells become detached from the main mass and float in the blood current. In a short time after the cancer is developed in the breast, the lymph glands of the axilla become involved, and ulcerate.

There are very few persons afflicted with cancer before they reach the zenith of life, for the reason that the heart beat is strong and the circulation very active. On this account, the blood corpuscles are seldom arrested long enough to degenerate into malignant cells.

Nearly all cases of cancer occur in persons after they pass the zenith of life, for the reason that, in many such persons, the heart beat is weak and the circulation so inactive that the blood corpuscles are easily retained in a congested area produced by some irritation or contusion long enough to degenerate into cancer cells.

Cancer is not contagious or infectious. The "juice" of cancer is not inoculable or communicable by immediate contact. There is not upon record a solitary instance, from the earliest periods down to the present time, in which cancer was imparted in this manner.

What I have said about the cause and nature of cancer, plainly indicates that early operation, if thorough, either medicinal or surgical, will affect a permanent cure.

Technic of Medicinal Operation

When a person comes to my office to be operated upon, I make a 10-percent solution of cocaine, saturate absorbent cotton and apply it to the growth. I give the cocaine twenty minutes' time to produce anesthesia of the parts. During this time, I expose zinc chloride to the air until it liquifies, or partially so. Then I add an equal part of chlorate of potassium. I select two pine probes, the size of a match stick. One I cotton on the end, moistening the cotton with water; I dip it in the crystals of cocaine and apply to the parts with pressure to assure complete anesthesia of the part to be operated upon. If the growth is hard and nodular, I press as much of the cancer "juice" as possible out of the growth. This will facilitate the penetration of the medicine.

Then I dip probe No. 2 in nitric acid and moisten well the skin surrounding the growth,

1/4 inch in width. I then dip the cottoned end of probe in the mixture of zinc and potassium and apply to the parts with pressure so as to make it penetrate as deep as possible. Then I dip the cottoned end in the solution again and use the probe at right angles with the parts to be operated upon, making firm pressure, giving the probe a boring motion, until I find the tissue necrosed to a certain depth. I remove the necrosed tissue with a knife or curette. In scirrhous cancer, I use chloride of zinc without the chlorate of potassium.

In hard cancers, I sharpen the end of the probe so that it will penetrate the tissue more rapidly. The zinc and potassium I use freely and, sometimes, I use nitric acid in full strength on parts that resist the escharotic action of the zinc potassium mixture. For after treatment, I order a flaxseed poultice applied until the remaining necrosed tissue comes away; vaseline if located where poulticing is not convenient. I then order absorbent cotton applied, moistened with a saturated solution of potassium chlorate and kept wet until almost healed. Then an ointment composed of equal parts of nitrate of mercury ointment and potassium chlorate until fully healed: and applied to the cicatrix once a week for two months longer.

If the patient suffers from the operation, it is due to insufficient cocaine used. I presume that some physicians would prefer novocaine to produce anesthesia of the parts. I have not noticed any systemic effects from cocaine used as described.

The operator should be sure to destroy the bottom cell; for, upon this depends the success of the operation. If he has not the courage to do this, he had better not operate. An incomplete operation will hurry his patient to the grave.

If there is any doubt of the operation being radical, it would be well to have the patient return, after the necrosed tissue is removed, for inspection. If you find any suspicious looking tissue in any part of the sore, destroy it. If you leave a single cell, there will be a recurrence.

A physician will soon become expert in the operation and will be able to destroy a fair-sized epithelioma in two hours, including the time to produce anesthesia. Patients come to my office on one train and leave on the next minus their cancer.

This operation will also cure lupus and rodent ulcer.

Internal cancers should be removed by the

knife as soon as discovered; external cancers likewise, where a medicinal operation is not expedient.

In cancer of the uterus, the entire organ should be removed with the knife. In cancer of the mammary gland, the entire gland should be removed with the knife and, if the operation is performed early, before any cancer cells get in the circulation by pressure on the cancer mass, there will be a radical cure.

Women in the cancer age should be taught through the lay press that, when they discover a lump in their breast, no matter how small, they should go to a physician and be treated. A "lump" in a woman's breast in the cancer age is almost a certain warning symptom of cancer.

The reason why there are so many cases of cancer of the uterus and mammary gland of women in the cancer age is, that the menopause ends the functional period of these two organs and they have, therefore, a very weak circulation. The least irritation or contusion will arrest the blood corpuscles and these will in time degenerate into cancer cells.

A weak circulation is primarily the cause of cancer and, therefore, cancer cannot develop in a person with a normal circulation. Many people have a weak, abnormal circulation after they pass the meridian of life. This is plainly indicated when we know that cancer destroyed 93,000 people in the United States in 1922.

Medicine should be prescribed to be taken internally that will stimulate the circulation and bring it to normal if possible. I prefer iron, arsenic, and strychnine.

If the bowels are constipated, laxatives should be used and the patient should be a vegetarian as near as possible, and drink enough water daily to keep the urine clear in color.

A salt-water bath followed by a good rubdown twice a week at bedtime will very materially aid in bringing the circulation up to normal.

A physician that will take the advice given in the foregoing will have a higher percentage of cures than he will in typhoid fever or neumonia.

J. E. TIBBINS.

Beech Creek, Pa.

[We are occasionally asked for remedies that may be applied locally to epitheliomas or other accessible malignant growths. Here is one that has given our correspondent good results. We have never used it and can not judge from personal experience.

Doctor Tibbins views cancer as the result of long-continued irritation. That, we apprehend, is not the fundamental cause but rather a contributory one. The underlying cause, it is now claimed, is systemic and not localized. If we understand the newer teachings correctly, a person may be subjected to repeated and long continued irritation and not develop cancer, even though he be in the cancer ageproviding that there is no carcinosis present, that his metabolism is entirely normal and no irregularity in the physical processes takes place. The whole cancer chapter still is very confused. But, undoubtedly, people in the "cancer age" should beware of continued local irritations, especially if their body chemistry is not quite normal.-ED.].

SOME MISTAKES AND NEAR-MISTAKES

Twenty odd years ago, when I was fresh from school and a roust-about army "surgeon" in the Philippines, a light-haired, fine-haired, skinny built soldier was admitted to my hospital of which I constituted both, the staff and chief of staff. This boy had a light fever following a rigor. Malaria was my guess. Malaria was easy to guess, for it was prevalent and common. But, quinine failed to confirm the diagnosis. In spite of it, the boy would have, some days, two or three chills with as many exacerbations of the fever.

Fever was a constant symptom and ranged from 1/2 to 1 degree Fahrenheit, except for a few hours after the chills when it moved up a degree or two. Sometimes, there would be an interval of two or three days between chills. Constipation and flatulence were the rule. Tests for typhoid fever proved negative, and I was a derelict on the sea of inexperience until the end of about the second month, when autopsy revealed a chronic peritonitis. Then I set out to learn something about chronic peritonitis, and thereafter, for a long time, I palpated every abdomen that presented, not in a hunt for peritonitis, but in an effort to learn what a normal abdomen feels like. This experience has served me well,

Several years ago, I was called to see a case of typhoid fever, the case of a neighboring physician who was absent on account of illness. Found the patient, a woman of twenty-five, greatly emaciated and well nigh exhausted from a six weeks' siege. There were numerous metastatic abscesses in various parts of the skin. In the left hypogastrium, was a fluctuat-

ing tumor mass, as large as a baby's head, and a peritoneal abscess was the guess. A consultant was called. The surface abscesses were drained, but it was decided to make an exploration with the aspirator before opening the peritoneal abscess. This was done, but the job was completed with a catheter and three quarts of urine drawn, notwithstanding the fact that we were informed that the kidneys were acting freely.

A few years ago, I was called three stations away to "lance a rising" on the chest. I had twenty-four minutes to catch the next train back. The patient, a man about thirty-five. was in bed on his back complaining of excruciating pain in the region of the abscess which was located over the second rib and adjacent interspaces to the left of sternum. The skin over the abscess site was considerably elevated and purplish in color, and at a glance looked as though there might have been a teacupful of bloody pus just ready to break through. Without ceremony, I prepared to operate, for time was limited. The knife was prepared and cotton packed around to catch the pus. Conveniently stationing myself, knife in hand ready for the stroke, I proceeded to palpate in order to find the best place. But, of a sudden, I changed my mind and did not operate: for, I had an aneurysm to deal with, one that had eroded (completely resected) about one and a half inches of the rib.

Energetic antiluetic treatment soon got this fellow comfortable, and he died of "flu" nearly two years later, and with a still larger aneurysm.

Through mistake, I once took an overdose of cannabis indica. Within half an hour, ideation became noticeably stimulated, and this progressed rapidly. In talking, I would apparently go to sleep between words. These "naps", which were but periods of forgetfulness, were short in the beginning, apparently of but a few moments' duration, and on arousing I could remember the "last word said". As the intoxication progressed, these periods became longer and longer in duration (apparently) and, finally, they seemed fully ten minutes long, and I would often forget the last word said. Yet, all this time, what I set out to say was clear in my mind, and it was only by a process of reasoning, by the assumption that it had been said, and by ignoring results of mistake. that I got anywhere with my talking. Guess I was not incoherent with it, for no one seemed to observe that anything was wrong. I caught myself feeling the pulse, and chided myself for cowardice, but quick as a flash the thought came that it was not on account of cowardice but for scientific purposes.

At the end of about one hour, delusions began to appear. About this time, I had a long call and started. I was riding a spirited horse. All at once, I appeared to be in a cage about similar to that in which lions are kept, and this cage was in rapid vibration. Here I decided to dismount, and did. No sooner did strike the ground than the delusion was over, but it returned as soon as I was mounted and in motion again. This time I ignored it and it soon passed away to be succeeded by another, which was a huge Dutch wind mill set horicontally. My body was the axis and round me the great arms of the wind mill moved rapidly. Many delusions thus succeeded each other, the last one being about eleven p. m. and some ten hours after the dose was taken This delusion occurred while on my way from the barn to the house. A nearby church bell began to ring and I wondered what it meant at that time of night. I stopped to listen and the bell stopped ringing. Then I realized that it was a delusion. When I started to walk again, the bell began ringing again. I made several stops on the way to the house with the same result.

A very interesting delusion and one that lasted throughout the intoxication, or rather until sleep overtook me, was that of a smal spot of phosphorescent hue which would appear at the base of the brain in the beginning of each new thought, and spread out fan-shape over the entire brain, something like a flash of distant lightning.

Of the many delusions, of which those mentioned are but a few examples, only one, beside the phosphorescent flashes, repeated itself. Rather early in the journey mentioned, it occurred to me that I had forgotten my saddle bags. This was repeated many times on the way to see the patient and each time it was a source of rather painful distress. Although this happened more than fifteen years ago, the delusion occasionally reappears now, and always at times when my entire attention is needed at the wheel, and it is not dispelled until I actually see the medicine case. These delusions are but momentary in duration, but are full of distress, and my mind is absolutely blank to all else during the time.

There was some nausea and vomiting within the first few hours, and some gastric disturbance, perverted appetite and a mild general malaise persisted for several days.

There is no other incident in my life where-

of details are so impressed on my memory as this one of hasheesh intoxication.

A. GRAVES.

Russellville, Ala.

ECONOMIC PROBLEMS

I've read No. 1 of Vol. 30 with a deal of interest and found something worth while in every article. Last night, after the teaching staff had gone to bed and as I sat alone with a smoke halo bothering my vision frequently, I went through the magazine from "kiver to kiver."

I found amusement in "The Average Annual Income." That is, in your comparisons and findings. I know, as you do, that the worth-while practitioner of medicine doesn't get his worth. There are a few, comparatively speaking, in populated centers who fare well. Others, quite as well qualified perhaps, dangle on the ragged edge continually. It comes through conditions, Doctor. It is not always from lack of "pep," from little or no initiative or from an undersized ability. An oligarchy is little interested in the masses except in so far as production keeps up with its (the governing few) schedules. What the most of us get is by fighting for, as well as working for. Continually there is a conflict, 50-50, with our labors.

It is not the proper method of getting along by a long shot and, eventually, discontent will become rebellion, as many times witnessed in the past, and a better way of doing things and a saner system will be inaugurated. Those who produce nothing will get nothing. Whether ministers of the gospel are producers or not, we'll not consider now. Personally, I consider them pretty well intrenched in the parasite class. [We cannot agree with that.—Fn.]

On an average, the producer-the maker of things (and this includes the doctors of medicine, the teachers and the intellectuals who endeavor to better our brains and our bodies, who strive to make clearer our every-day path and widen our vision)-get but a scant fourth of what they produce. This comes from real government statistics, and not from socialistic propaganda nor the lurid doctrines (so called) of the red internationale. You remark that it is considered both politic and diplomatic to coddle labor unions and to appease them in every possible way. How come, Doctor? For a full two years now, banking on a program nursed and made to toddle on rather shaky limbs directly after the war, the Associated Industries has worked long of hours, day in and day out, in its 100 percent American Plan of open shop, union busting and hamstringing of labor. And I shall have to admit that, in a general way and quite thoroughly, the plunderbund was successful. In my own "union," the Marine Engineers' Association, we were bent down to all but a miserable defeat in every line of welfare we had taken

up and considered long settled.

Your fling (?) at your plasterers, carpenters, steamfitters and bricklayers doesn't well fit. Were those tradesmen you speak of continually employed, their scales of wages, per day, would be about in keeping with those of other skilled workers. You will note, if you care to dig statistically, that your steamfitters, bricklayers and so on bank scarcely more than the steadily employed ditch digger. And the ditch digger, by the way, is more essential to our modern town than a bunch of lawyersor even preachers.

I see that Dr. A. Milton Cox is out with a sharp javelin after chiropractors. I hope he gets 'em-hide and "taller." He also brings up the possibilities of good, in a quiet way, of organization patterned "to some extent after well known organizations in the industrial field" as material help in the increasing conflict with the dubbers and rubbers. And, why not, may I ask? Aren't doctors industrialists? Or are they a side issue of aristocratic lance bearers and drug dispensers? The producers are a mite wiser than they were. They don't go much on this god stuff, nor do they bank a picayune-sou on divine rights of those who may be, for the moment, treading on an upper crust. Is a doctor's diploma of more value to him than my chief engineer's license is to me? In organization. there is more power to do good than there is in individual effort. Surely; organize by all means.

For the life of me, I can't see why professional men think themselves so dizzily aloof from the socalled common herd. They work with them and for them and for compensation. We, all of us, have very steep hills to climb, and I think we can reach the peak more easily and with greater satisfaction by hand-in-hand pulling together than by widespread and separate upgrade drudgery.

WILL A. BARROWS.

Kake, Alaska.

[Our very good friend, Barrows, does not hesitate to speak out in meeting. Where he objects to our criticism of wages for workers

in the building trades, we admit that our remarks may have been specially blunt. You see, we had just been bled aplenty, in our own pocketbook, the place that is very vulnerable.

No doubt, the prevailing system of remuneration for work done is all wrong. Here, again, it is an instance of unequal or, at least, inequitable distribution of the returns, of earnings, of labor. How greatly physicians are affected by this prevailing state of affairs, we realize only too well. Yet, how can matters be improved? Do we have to pass through a revolution? Or is a friendly and peaceable adjustment possible? We wonder.-ED.]

NOTICE OF CHANGE OF NAME

The Strophanthin used in the preparation of Strophanthin Solution 1:1000 "B. & S." is the amorphous, non-nitrogenous glucoside obtained from the seed of the Strophanthus Kombe Oliver. To prevent possible confusion with preparations made from the crystalline Strophanthus Gratus, Strophanthin Solution 1:1000 "B. & S." will hereafter be known under the shorter and more distinctive name "Kombein" (pronounced Kom-bay-in). This change is made in the interest of prescriber, dispenser and patient alike. Kombein is supplied only as 1 Cc. ampuls in boxes of 6 and 12 ampuls each.

HOSPITAL FOR CRIPPLED CHILDREN

A tract of land in Minneapolis on the banks of the Mississippi river (valued at \$100,000) and an endowment fund of \$900,000 have been given to the University of Minnesota for the construction and endowment of a hospital and convalescent home for crippled children. This is the second considerable gift made this year to the school of medicine at the University of Minnesota, \$250,000 having been received for a cancer institute.

The gift for a children's hospital comes from William Henry Eustis, a former mayor of Minneapolis, himself a cripple from youth. One month before making the gift to the University of Minnesota, Mr. Eustis presented 21 acres of land to the city of Minneapolis as a site for the Dowling school for crippled children which the Minneapolis board of education is to build. The land given to the university is a tract of 44 acres.

The Minnesota board of regents has decided to erect the hospital for children on the campus of the school of medicine, retaining the riverside tract as a site for the convalescent home. Fifty beds is the contemplated hospital capacity, while the home will be built to accommodate about five times that number, due to the greater length of time the convalescents will require attention.

Free care is provided by the gift for all crippled children who can not afford to pay. In case there are surplus beds, however, the University of Minnesota is permitted to accept patients whose parents, guardians or friends can pay the cost of their treatment.

Due to the fortunate juxtaposition of the convalescent home and the school maintained by the board of education, inmates of the home will be provided excellent opportunity to continue their educations, even though they are far removed from their homes. The institution will be called "Minnesota Hospital and Home for Crippled Children."

PROFESSOR PIRQUET GOES TO MINNESOTA

University of Minnesota, Junc.—Dr. Clemens Pirquet, professor of pediatrics at the University of Vienna, and director there of the Children's Hospital, has been appointed professor of pediatrics at the University of Minnesota. It will be his third term of service in the United States, as he was professor and chief of pediatrics at the Johns Hopkins Medical School in 1909-1911, and (in 1921) came to America to deliver a series of lectures. Dr. Pirquet is thought of as probably the leading pediatrist of the world.

Pirquet first came into prominence as an investigator in 1905, when he published a monograph with Dr. Schick on the nature of serum sickness. Two years later (1907), he developed the Pirquet test which is so extensively used in the diagnosis of tuberculosis in children. Pirquet's earlier interest in medicine was in the infectious diseases of children, he having published numerous articles dealing with various phases of the acute infectious diseases

From 1914 to the present time, his work has been chiefly with the problem of nutrition and nutritive disorders. In this connection, he has carried on extensive studies on growth and physical constitution of children and in the development of a precise system of nutrition known as the Nem system. These studies have included a complete review of various devices of nutrition and of growth, with the use of newer statistical and graph methods.

Since the war, conditions have led him into the care and treatment of tuberculosis in children. He has at the present time a large service in Vienna devoted to the treatment of tuberculous children. Professor Pirquet is 49 years of age.

DIPHTHERIA IN CITY AND COUNTRY

In New England, at least, the susceptibility to diphtheria is higher among persons living in sparsely settled or rural regions than it is among those living in cities; and it is much higher among the well-to-do than among the poor, and among the native born than among the foreign born. Such are the conclusions reached by Dr. C. W. Kidder, of the U. S. Public Health Service, after an investigation, recently completed, in the Eighth Sanitary District of Vermont, which has a population of 35,000.

The Schick test was administered to a little more than 2,000 teachers and school children whose parents requested it. Of these about 1,500 were found to be susceptible to the disease; and their immunization with toxin-antitoxin was at once begun.

The Schick test is made by injecting a tiny amount of diluted diphtheria toxin beneath the outer skin layer of the forearm. If the person is immune to diphtheria, that is to say, if his blood contains substances that neutralize the toxin that is injected, nothing results. But, if his blood does not contain such substances, a small rosy spot soon appears at the point of injection and persists for a few days. It causes little or no discomfort.

The value of the Schick test lies in its pointing out those who are susceptible to the disease and in thus enabling them to be immunized by toxin-antitoxin before an epidemic breaks out. It also enables those who are not susceptible (estimated as being from 20 to 30 percent of children and 35 to 50 percent of adults) to save the expense of immunization either before or during an epidemic. This is the second great step in the fight against diphtheria, the first being the introduction of diphtheria antitoxin, which came into general use about the beginning of the century and which caused the diphtheria death rate to drop from 43.3 per hundred thousand of the population in 1900 to 15.3 per hundred thousand in 1920, the latest year for which figures are available.

Notwithstanding the distances to be covered and the relatively high cost and difficulties of

E. I. RAYMOND.

such work in rural districts, the value of the Schick test and of the toxin-antitoxin immunization, adds the Public Health Service, is so great that it should be included at all appropriate times in the programs of health departments. Particularly should this be done in rural regions, where the degree of susceptibility to the disease is greatest and where facilities for prompt and adequate treatment are most frequently lacking.

THE DOCTOR'S PLIGHT

'Twas midnight, but the Doctor's light Still shone.

He'd figgered o'er his books till sight Was gone.

For thirty years he'd worked by day And night.

Been taught and always tho't that way
Was right.

But, now, his figgers'd raised a doubt For him.

'Twas clear from them, he'd got about All in.

He'd bills galore unpaid before His face.

Of cash to pay, there was no more A trace.

Accounts due him for fifteen years Or more,

He'd dunned them till their very ears Were sore.

It did no good, it seemed, to dun, He tho't;

It never seemed to bring the mun, Nor aught

Except excuses; man's common coin,
From all:

"There was a note the bank was goin'
"To call;

"Their sickness'd cost a thousand bucks,"
They said.
"They'd bo't a car or else some trucks";

(Unpaid).
"The times were hard; the banks were broke," or bent.

broke," or bent.
'Twas true, they'd never had in soak

A cent. The Doctor tho't these matters o'er and

O'er, that night.

He saw that they had drawn his fetters

More than tight.

Collect or bust must be my rule

Just now. For, if I don't, I am a fool I know.

They'll cuss me some I have no doubt At all;

But I'll get a car and go the route This Fall.

Just then a charity call came in . . . The bell!

He hesitated; was lost; gave in; Oh, H . . . !

A year passed by. The Doctor's light Still shone. He'd figgered o'er his books till sight Was gone.

He'd bills galore unpaid before His face.

Of cash to pay, there was no more A trace!

Wellington, Colo.

[Concluded from page 586] invaded by primitive protoplasm (the sarco-plasm).

The Normal Span of Life

What is the normal duration of time consumed in the final culmination of the triumph of the primitive over the specialized element? Buffon claimed that the normal duration was six to seven times that of the period of growth, but he erroneously maintained that fourteen was the age at which growth terminated. Flourens fixed the age at which the process of growth comes to an end at twenty, at which the bones have ceased their growth. Thus the span of normal life is from 120 to 140 years.

We may now arrive at a definition of physiologic death from the viewpoint of the struggle between the conjunctive and specialized elements in the body of the organism: Physiologic death is the final culmination of the triumph (unstimulated in their progress by any cause whatsoever) of the conjunctive cells over the specialized cells, bringing about, by their unstimulated degenerative invasion of the vital organs, a complete disturbance of the harmonious activity existing among them. Any deviation from this at once falls into the province of pathologic death.

Physiologic Death

From the viewpoint of biochemistry, ageing, which finally culminates in natural death, is a process of deaquification by aggregation. This is a process which takes place in the ageing of all organic colloids, and is claimed to be the one which changes the organism from its embryo stage to senility and which finally ends in death. In the human species, this process extrudes the H₂O and defines the progress of life from birth to natural death. Old age, expressed in terms of the biochemistry of senile degenerescence, is a certain stage in the deaquification of the protoplasm of the tissues This process of deaquification, it has been suggested, may be represented by the equations:

Pm(OH H)n + Pm(OH H)n = 2Pm(OH H)n+nH2O.

2Pm(OH H)n+2Pm(OH H)n=4Pm(OH H)n+nH2O.

[Pm(OH H)n stands for the collodial protoplasm of human tissues, and Pm stands for protoplasm.]

What Others are Doing

INTESTINAL AUTOINTOXICATION AND THE ACIDOPHILUS BACILLUS

When the Bulgaric bacillus was introduced as a "friendly germ," it was hailed as a harbinger of the fountain of youth, and it was assumed rashly by unreasoning optimists that it would now be a very simple thing to overcome and also to prevent the evil consequences of intestinal autointoxication. It is a matter of regret that expectations were disappointed to a degree and, while the Bulgaric bacillus has a definite place in therapeutics, that place is not nearly as important as had been hoped.

The task is, to find something that will counteract the exuberance in the intestinal canal of the colon bacillus and that will prevent the toxemia to which it gives rise, as has been demonstrated definitely. Aside from means frequently employed, such as antiscptic substances that can be introduced by mouth and exert their inhibiting action upon the bacillus coli in the intestine, it has always seemed desirable to find a "friendly germ" that would definitely curtail the growth of the colon bacillus and that would interfere with its toxin production.

Quite recently (Jour. A. M. A., Jan. 13, '23, p. 92), L. M. Gompertz and M. G. Vorhaus reported upon their bacteriological and clinical experiences with the bacillus acidophilus. Their aim had been, to implant this bacillus in the intestine, maintaining it there as the predominant organism and then to determine what changes, if any, were noted clinically. If the intestinal flora could be so changed, they reasoned, that the colon bacilli could be kept at a minimum with a lessening of their toxic products, a great deal would be accomplished toward combating the results of autointoxication.

In the course of their investigations, the authors determined indisputably that the B. Acidophilus can be successfully implanted in the human intestine and that this can be done to such a degree as to maintain this bacillus as the predominant one in the intestine. The authors say:

"Its effect in changing the intestinal con-

tents is noted in two ways: In the constipation group, the feces become comparatively odorless, while, in the diarrheas, there is a gradual formation of the fecal material until a soft, light and partially formed stool results. The second effect is the relief from the toxic symptoms that previously existed. This bears a definite and constant relationship to the change in the fecal flora. Furthermore, the accumulated evidence and clinical belief that the products of intestinal putrefaction are harmful give additional importance to these results. As a consequence of more than two years' work, we believe that B. Acidophilus minimizes intestinal autointoxication and is indicated in the socalled toxic intestinal con-

The authors warn against unjustified enthusiasm and against repeating the history of the Bulgaric bacillus, substituting for it merely the Bacillus Acidophilus. The range of usefulness of the latter, they believe, seems clearly defined and it consists in overcoming and preventing intestinal toxicity by predominating over the colon bacillus which latter is responsible for intestinal toxic manifestations.

However, there are definite indications for future work with B. acidophilus. Its effect on typhoid, paratyphoid and the dysentery group deserves careful consideration. Theoretically, B. acidophilus may be employed as a prophylactic agent. A colon-bacillus infection of the gall-bladder and its ducts or of the pancreas finds us usually without any means of proper treatment. By regular courses of B. acidophilus, we have a means that offers some hope in the prevention of an ascending infection by B. coli. It certainly deserves consideration because of its harmlessness and ease of administration.

BOTULISM EPIDEMICS

A recent bulletin of the U. S. Public Health Service refers to ninety-one single or group outbreaks of botulism having occurred in the United States and Canada. A total of 345 persons have been affected, of whom 213 have died, giving a case mortality of 61.7 percent. Of the 91 outbreaks only 30 have been proved bacteriologically or toxicologically to be due to botulism, the others being so adjudged from the symptoms. About two-thirds of the outbreaks (25 proved and 38 not proved to be botulism) were caused by plant food, and about one-third (5 proved and 14 not proved) were caused by animal food.

The following products have been proved or assigned as the particular food in which the germ causing this disease developed in the cases investigated: String beans, home canned, 17; commercially canned, 3; corn, home canned, 9; commercially canned, 1; asparagus, home canned, 5; apricots, home canned, 3; pears, home canned, 2; spinach, home canned, 2; commercially canned, 6; beets, home canned, 1; commercially packed, 2; liquor, home brewed, from old home-canned products, 1; cottage cheese, home prepared, 2; pickled mackerel and herring, home preserved, 1; ham, home cured, 2; commercially cured, 1; sausage, home prepared, 1; commercially prepared, 2; salt pork, home cured, and beef products, home prepared, 3; minced olive relish, commercially canned, 3; ripe olives, commercially pickled and bottled, 7; pork and beans, commercially canned, 1; tomato catsup, commercially bottled, 1; clam juice, commercially bottled, 2; tuna fish, commercially canned, 1; evaporated milk, commercially canned, 1; and minced chicken, commercially prepared, 1.

Spoilage, due to botulism germs, adds the Public Health Service, cannot always be determined by the appearance or odor of the food.

BOVINE TUBERCULOSIS IN A CHILD

The press service of the U. S. Department of Agriculture relates a case history of tuber-culosis in a child which was traced definitely to bovine tuberculosis by Dr. E. C. Schroeder.

During the latter part of October, 1922, a tuberculin test was applied to a herd of 12 dairy cows. The test was made at the owner's request under the plan conducted by the state and Federal officials working cooperatively. As a result of the test, 11 of the 12 cows were classed as reactors and, upon autopsy, all revealed lesions of tuberculosis, two being advanced cases.

The veterinarian who made the test was informed by the owner that his eight-month-old baby girl had recently developed a swelling in her throat which was being treated by their family physician. The child had been fed on the milk of the infected herd for about seven months, and the physician believed that the enlargement in her throat was tuberculosis of bovine origin. The attending physician soon afterward decided that an operation to remove the diseased tissue was needed. As a result of the operation, the child is recovering.

A part of the diseased tissue was found to contain bacteria which were proved beyond question to be tubercle bacilli of the bovine type.

The case described is particularly interesting, not because tuberculosis is of rare occurrence among children, but because the discase in this instance was traced to the very cows from which the infection emanated.

Conservatively estimated, bovine tubercle bacilli, or the type with which the milk obtained from tuberculosis dairy herds is apt to be contaminated, are responsible for about 10 percent of the deaths due to tuberculosis among children under five years of age, and for many cases of tuberculosis which do not end fatally but often leave their victims permanently scarred or crippled.

REMOVING ADHESIVE PLASTER

The Journal A. M. A. (July 7, p. 27) contains a brief article, contributed by Dr. Harper F. Zoller, to the effect that medicated tape or adhesive bandage can readily and painlessly be removed from the patient by moistening the bandage with a little pure ethyl acetate held in absorbent cotton, by sopping lightly over the entire surface of the bandage or tape. In a few seconds, the adhesive surface is killed and the bandage can be pulled free from the skin or hairy surface without the least "pull" to the patient. The ethyl acetate possesses a rather penetrating odor, but, because of its high vapor pressure, it evaporates entirely in a few minutes, leaving neither odor nor ill effect. Dr. Zoller says:

When the adhesive tape or bandage covers areas or surface which may become infected, a few drops of tincture of iodine or a few crystals of pure iodine may be added to the ethyl acetate (the latter is an excellent solvent for iodine) for purposes of disinfection. The solution may then be used as before for the removal of the bandage.

Removing Adhesive Spots.—It is frequently necessary to remove from a skin surface the grimy portions of adhesive left from strips of tape torn away by other means. Ethyl acetate on a tuft of absorbent cotton will do this nicely. Ethyl acetate acts as a solvent

of the adhesive, and is a very safe and satisfactory solvent to employ about the sick or convalescent ward. There are other esters that can be employed in lieu of ethyl acetate, but it is doubtful whether they will ever be as suitable, both from the odor, vapor pressure and economic standpoints. Several physicians and hospital attendants who have tried this solvent have praised it highly.

Doctor Zoller adds that it is no uncommon experience to have nurses and attending physicians in hospitals and homes tear the adhesive bandage loose from the patient, at the expense of pain and ill feeling. Whenever the hair has not been shaved, this mode of operation causes additional discomfort. Frequently, recourse is had to gasoline and other solvents, but gasoline may prove very unsatisfactory at times; nor is it as good a solvent for the adhesive. A small bottle of ethyl acetate in the physician's kit or in the medical chest of the hospital, or, further, in the first aid cabinet, will greatly lessen the torture from adhesive bandaging.

LEPROSY AMENABLE TO TREATMENT

Leprosy is in a measure amenable to treatment, says the U. S. Public Health Service. During the last ten years (1912-21), a considerable percentage of the lepers segregated at the Kalihi Hospital near Honolulu and on Molokai Island have been paroled; that is, they have been released as being "not a menace to the public health," but have been required to report for examination at certain intervals which vary with the individual case. Of those paroled, about 13 percent have relapsed and have returned to segregation; but about one-fourth of these were later paroled for the second time. In all, 242 lepers were paroled; 31 relapsed and seven of these were later paroled. Ten were completely released from parole.

The chance of arresting the disease decreased with the length of time that it had been allowed to go without treatment unless this period was seven years or more. Apparently, patients who survive without treatment for seven years possess powers of resistance that slightly increase their chances for marked improvement under treatment.

Those who desire it are treated with chaulmoogra oil and its derivatives.

The parole system was begun in 1912 and has worked admirably. Those paroled appear

to have told their friends that the conditions existing at the hospital were good; and the mere fact that they had been released has shown that segregation might lead to cure and not to lifelong confinement, as it almost invariably did previous to 1912. As a consequence, many lepers, instead of concealing the disease up to the last possible moment (and thereby spreading it through the community) are now surrendering of their own accord and taking treatment. This earlier surrender and earlier treatment hasten the degree of improvement that will secure parole and will later, perhaps, complete release. About 70 percent of these who have been paroled were in segregation for less than two years.

PENETRATIVE POWERS OF ARSENICALS

The probable reason why the chances for the complete cure of a generalized syphilitic infection are poor, says the U. S. Public Health Service, is because the usual remedies (arsphenamine, neoarsphenamine, and silver arsphenamine) all lack the power necessary to enable them to penetrate the infected tissues in sufficient amounts to destroy the last remaining parasites. Other arsenicals, sulpharsphenamine, tryparsamid, and 3-amino-4-oxyphenol arsonic acid, have superior penetrative powers and their use as remedies is suggested.

The report was made by Carl Voegtlin, M. I. Smith, Helen Dyer, and I. W. Thompson, all of the U. S. Public Health Service, after prolonged experimentation, both chemical and bacteriological, on rabbits. While the authors admit that results so obtained cannot be transferred, without reservation, to the treatment of human syphilis, they nevertheless advance several reasons that cause them to believe that a clinical trial of the more penetrative preparations named is strongly indicated.

In conclusion, they express, as Ehrlich did, their belief that, no matter what arsenical may be used, better results will be obtained from single large doses a week apart than from smaller doses given at shorter intervals.

CHILDREN PAY PENALTY FOR ANTI-VACCINATION PROPAGANDA

As ever in the history of smallpox, the caseincidence of new outbreaks is greatest where the influence of antivaccination propaganda is most effective. The unvaccinated children are the chief sufferers. This fact is shown on a gigantic scale in the recent experience of the Philippine Islands (Jour. A.M.A., July 1, 1922, p. 40).

Students of the prevailing world-wide menace of smallpox have seen many statements from antivaccination propagandists that the sad experience of the Philippines, in 1918 and 1919, was a repudiation of the principles of modern public health measures for smallpox suppression. These statements are mere allegations that 50,000 smallpox deaths occurred in the face of systematic, persistent vaccination. The real truth is, that the practice of effective vaccination had been exceedingly lax since the general campaign of 1909 or thereabouts, and that most of the 50,000 deaths occurred among the children and other elements of the population unprotected because of the indifferent pursuit of vaccination in recent years in the islands. The age statistics given by Drs. Heiser and Leach for Pangasinan and for Manila show a predominance of both cases and deaths among the unvaccinated. A careful review of these facts will make it possible for American health officers to refute diligently circulated misstatements of the antivaccinationists.

Some information on the age-incidence of smallpox cases in our own population has been furnished this office by Dr. W. M. Dickie. Secretary of the California State Department of Health. These facts bear out from American experience, the conclusions of Drs. Heiser and Leach. That which was expected in California has happened. A marked increase in the concentration of smallpox upon the ages which have the highest proportion of unprotected persons, occurred between 1916 and 1921. In 1916, 36.6 percent of the cases were of persons below 15 years of age; in 1921, this proportion had increased to 45.8 percent. As the number of unprotected children of school age increases, through the opposition of antivaccinationists to compulsory vaccination as a condition to school attendance, the number of smallpox cases among the young also increases. An example of the fallacy of the antivaccination appeals to parents may be obtained by paralleling what the antivaccinationists say with what Drs. Heiser, Leach and Dickie set forth from official records. The data contributed by Dr. Dickie are shown in the following table:

Age Distribution of Smallpox Cases in California, 1916 to 1921*

Ages	Number of Cases					Percent of Total				
	1916	1918	1919	1920	1921	1916	1918	1919	1920	1921
All ages	205	654	1560	4218	5278	100.0	100.0	100.0	100.0	100.0
Under 5	25	41	144	341	392	12.2	6.3	9.2	8.1	7.4
5 to 9	34	104	281	722	966	16.6	15.9	18.0	17.1	18.3
10 to 14	16	87	250	757	1060	7.8	13.3	16.0	17.9	20.1
15 to 19	16	78	178	408	628	7.8	11.9	11.4	9.7	11.9
20 to 24	23	49	118	292	354	11.2	7.5	7.6	6.9	6.7
25 to 34	41	110	189	570	607	20.0	16.8	12.1	13.5	11.5
35 to 44	30	117	222	602	685	14.6	17.9	14.2	14.3	13.0
45 to 64	16	65	159	468	516	7.8	9.9	10.2	11.1	9.8
65 and over	4	3	19	58	70	2.0	0.5	1.2	1.4	1.3

*Data for 1917 not available. [Reproduced from Statistical Bulletin, Metropolitan Life Insurance Co., July, 1922.]

"ANOTHER LITTLE JOURNEY"

Just now, there came to our attention "Another Little Journey, a Posthumous Manuscript by Elbert Hubbard," printed by The Roycrofters and published by Davis & Geck, Inc., Brooklyn, New York. This is probably the last unpublished manuscript written by Elbert Hubbard before he went on his last little journey, on the "Lusitania", which proved to be that long, long journey from which no traveler returns.

In this interesting little booklet, Hubbard paid well merited tribute to the old-time country doctor, to the modern surgeon and to those who go to unlimited and uncounted pains and trouble to make the surgeon's work safe, namely, the purveyors of his tools and appliances—in this particular instance, the catgut that is used for sutures. Hubbard realized, after going through the establishment of Davis & Geck, that the preparation of catgut is by no means a haphazard affair but that it requires the greatest care. He praised unstintedly where he thought praise deserved. The possession of this latest manuscript by Fra Elbertus is one that its owners may well be proud of. We are grateful to them for making its contents accessible to us physicians generally.

Among the Books

It so happens that a good many books on tuberculosis and tuberculosis problems are announced in this issue of CLINICAL MEDICINE. The Reviewer employs the expression "announced" advisedly. Circumstances put it out of his power to prepare detailed actual reviews of the books which, still, had to be brought to the attention of physicians. It is hoped that honest-to-goodness reviews can be prepared by fall, and that these can be presented before the Chicago Tuberculosis Society, at its initial meeting of the next season (1923/4).

RITTER: "TUBERCULOSIS"

Handbook of Tuberculosis for Medical Students and Practitioners of Medicine. By John Ritter. Chicago: 1923. Price \$6.00.

Here is a practical volume for the guidance of physicians in the management of their tuberculous patients. The author has long taught the subject and has become so fully familiar with its everyday, practical phases that the writing of a book was a natural result of his years of study, teaching and practice. The text reads as though one heard the author talk: clearly, simply, and understandingly. Truly, the book for the general practitioner. One that is worth while.

PAGET: "TUBERCULOSIS"

A Simple Treatment for Tuberculosis. By Owen F. Paget, M.D. With Introduction by J. George Adami, M.D. and Prefatory Remarks by W. P. Birmingham, M.D. New York: William Wood and Company. 1923. Price \$1.75.

Doctor Paget's treatment is based upon the well-known fact that the nasal secretions constitute a powerful defensive force against bacterial infection. The defense is not only mechanical in washing out bacteria that have been inhaled, but it has been demonstrated that it possesses active bactericidal power and that this can be increased artificially.

The treatment consists essentially in the insufflation of tubercle-bacillus emulsion in known quantities. Not only the author but also others have employed the method with very pleasing results, and it seems to be the more promising as corresponding investiga-

tions in the Pasteur Institute with reference to the upper trachea lend potent support to it. Tuberculosis students and physicians will surely be interested in this ingenious and simple method of treatment, and it is to be hoped that its actual value will be established definitely.

WEBB AND RYDER: "TUBERCU-LOSIS RECOVERY"

Recovery Record for Use in Tuberculosis. By Gerald B. Webb, M. D., and Charles T. Ryder, M. D. New York: Paul B. Hoeber, Inc. 1923. Price \$2.00.

This personal record for tuberculosus patients contains excellent suggestions and advice. Also, it is supplied with charts in which temperature and pulse readings can be entered, while numerous wise, stimulating and encouraging sayings are placed at the head and the foot of the chart pages.

The little book is so personal that it will appeal to the patient. Its use is to be recommended highly.

JACOBS: "THE TUBERCULOSIS WORKER"

The Tuberculosis Worker. A Handbook on Methods and Programs of Tuberculosis Work. By Philip P. Jacobs. Baltimore: Williams & Wilkins Company. 1923. Price \$3.00.

The scope of this work is self-evident. Physicians need it insofar as, often, they may have to direct the activities of tuberculosis field-workers. Nurses and others will study it for the guidance that will be found in its pages. We believe that nothing just like it has ever been done. Doctor Jacobs is unusually well fitted for the work, because of his long activity as a member of the head-quarters of the National Tuberculosis Association.

KRAUSE: "REST"

Rest and Other Things. A Little Book of Plain Talks on Tuberculosis Problems. By Allen K. Krause. Baltimore: Williams & Wilkins Company. 1923. Price \$1.50.

This useful little book is as suitable for the intelligent layman, especially the tuberculosis

patient and his relatives, as it is for the physician. The topics discussed are: Rest; The Treatment of Tuberculosis; Sputum Infection of Children; Adult Tuberculosis from Childhood; Infection and its Prevention; Antituberculosis Measures; The Tuberculosis Problem; The Elements of an Adequate Tuberculosis Program; Some Problems of Medical Education in Tuberculosis.

The several chapters are reproductions of articles published in journals or of addresses delivered on various occasions. It is well to possess them in collected form. The book is useful.

KRAUSE: "ENVIRONMENT AND RESISTANCE"

Environment and Resistance in Tuberculosis. A presentation of the nature of environment and resistance and their relation to the pathology, diagnosis, symptoms and treatment of tuberculosis. By Allen K. Krause. Baltimore: Williams & Wilkins Company. 1923. Price \$1.50.

Here is another splendid little volume by Doctor Krause for which physicians will owe him thanks. Environment and resistance—the old battling ground that had occupied the minds of thinkers in the old days, before the bacteriological basis of tuberculosis was understood; that seemed to have been pushed aside and, perhaps, solved, with the bacteriologic knowledge submitted by Koch and developed by others; and that irresistibly came to the front again, almost at once, when it was found that not every one in whose organs tubercle bacilli find lodgment acquires tuberculosis.

The problems of environment may be reduced, in a way, into tangible figures and may be worked out. Those of resistance, including the difficult question of constitution, are as puzzling, as difficult to understand as they ever were. Doctor Krause presents a discussion of the subjects that will help us to gain an understanding, at least to some extent. He does not solve them. That would be impossible. Still, he aids us in developing some lucid ideas about them.

CALMETTE: "T. B. INFECTION"

Tubercle Bacillus Infection and Tuberculosis in Man and Animals. Processes of Infection and Resistance. A Biological and Experimental Study. With 31 text illustrations and 25 colored plates. By Albert Calmette. Authorized Translation by W. B. Soper and G. H. Smith, Baltimore: Williams & Wilkins Company. 1923. Price \$8.00. This volume is intended for the tuberculosis

student. Its object is, "to sift out from the most important of tuberculosis studies [including those of the author himself, which have been considerable.—Ed.] the scientific principles on which to base, in the present state of our knowledge, the campaign against the most terrible of human infectious diseases."

Those who are familiar with Professor Calmette's work during the last two decades or so will understand that the book speaks for itself and that it does not need any support from outside. The tuberculosis student, the research worker, the laboratory man, but, also, the physician and the veterinarian who deal much with tuberculous subjects will find it a powerful aid in their studies. The translation is well done.

WELLS: "CHEMISTRY OF TUBERCU-LOSIS"

The Chemistry of Tuberculosis. Being a compilation and critical review of existing knowledge on the chemistry of the tubercle bacillus and its products; the chemical changes and processes in the host; the chemical aspects of the treatment of tuberculosis. By H. Gideon Wells, Lydia M. DeWitt, Esmond R. Long. Baltimore: Williams & Wilkins Company. 1923. Price \$5.00.

This book naturally will interest the tuberculosis student and the laboratory worker far more than the general practitioner. Still, a knowledge of the chemistry of tuberculosis is important for the latter, too, inasmuch as it will open up a better understanding of many phenomena that he observes.

MORSE: "INFANT AND YOUNG CHILD"

The Infant and Young Child, Its Care and Feeding from Birth Until School Age. A Manual for Mothers. By John Lovett Morse, A.M., M.D., Edwin T. Wyman, M.D. and Lewis Webb Hill, M.D. Illustrated. W. B. Saunders Company, 1923. Price \$1.75.

This is the most recent one of the mothers' books; informing them of what they should know in order to intelligently feed and care for their children from the time they are born until they are six years old. The text impresses us as being unusually well considered and carefully prepared. We are glad to see that the open-window fetish has not been worshipped by insistence upon wide open windows in all weathers and all the year round. The authors declare, very correctly, that, in zero weather, it is foolish to have the window wide open: a few inches is enough. In re-

gard to travel, automobiling, etc., good advice is given, the gist of which is, that the proper place for the baby is at home.

The text of this little book is very readable and we recommend it cordially for the purpose for which it is intended.

HUME: "BECHAMP OR PASTEUR?" Béchamp or Pasteur? A Lost Chapter in the History of Biology. By E. Douglas Hume. Chicago: Covici-McGee; 1923.

At this time, when the name of Louis Pasteur is in everybody's mouth, when dinners and banquets are given in commemoration of his acquirements, when a wonderful scientific exposition being held in Strassbourg is closely associated with his work, there appears a little book designed and attempting to throw doubt upon those things for which Pasteur is held in grateful memory, for which he is being honored and which are intimately associated with his name. This book denies the prevalent belief that Pasteur was the first to explain the mystery of fermentation, the cause of the diseases of silk-worms, and the cause of vinous fermentation; moreover, it asserts that his theories of microorganisms differed in basic essentials from those of the observer who, it seems, has been the real originator of the discoveries to which Pasteur has always laid claim.

In short, it is asserted that it was not Pasteur but Pierre Jacques Antoine Béchamp who actually is to be credited with all those wonderful discoveries upon which modern sanitation, bacteriology, immunology and biologic science are based. Béchamp was a remarkable man, a master of pharmacy, doctor of science, doctor of medicine. He was professor of medical chemistry and pharmacy at Montpellier and taught physics and toxicology, also chemistry, in Strassbourg. He was professor of biological chemistry in Lille. His researches and investigations, continued through many years of hard work, carried him far and often dealt with the same topics that Pasteur attacked.

The assertion of the author is that, in virtually everything, Béchamp opened the way, made the basic discoveries and that Pasteur followed, but without giving credit to his senior for work actually accomplished. Indeed, it is claimed that, for instance, Pasteur's "alleged" refutation of spontaneous generation can not be attributed to him; that he asserted spontaneous generation to occur, de facto, long after Béchamp had disproved it; that he, in his turn, yielded his belief in spontane-

ous generation only by being forced.

There is much interesting documentary material collected in this little book. However, it takes the position that the socalled germ theory of disease causation is based on error and that Béchamp's explanation, if elaborated and developed, would have been far closer to the truth.

The author's argument loses somewhat by its frank denial of the value of vaccination against smallpox and of active immunization in general. He even speaks of the modern ideas concerning the causes of infectious diseases as though these were found solely in pathogenic bacteria. He loses sight entirely of the fact that the strict and exclusive bacteriologic view enjoyed but a very brief vogue and that very early the essential importance of the soil, not only of the seed, of constitutional resistance, not only of infection was realized and made the subject of deep study for decades.

The historian will be interested in Mr. Hume's book. Whether time will ever decide against Pasteur and for Béchamp, we are not prepared to decide.

SANBORN: "BASAL METABOLISM"

Basal Metabolism: Its Determination and Application, Frank B. Sanborn, M.S., Editor, First Edition. Boston: Sanborn Company, Publishers. 1922. Price \$6.00.

This book is dedicated to the men and women who apply science in diagnosis and diligently labor to prevent the advance of disease. It is intended to supply the physician and the laboratory technician with a guide in making tests of metabolism and in interpreting the results of these tests. In view of the fact that the various apparatus employed have multiplied and that the different methods of interpreting results can be understood only through great familiarity, the various chapters have been contributed by different authorities. Each of the ten chapters containing original articles was prepared subjectively, as expressing the author's views. Various chapters are devoted to different forms of apparatusshowing a commendable spirit of impartiality. Nine forms of metabolism apparatus are described and information is given of the best methods of using each apparatus so as to obtain the best results.

In addition to the original articles, there are twelve chapters containing authoritative abstracts from contemporaneous literature.

While the first part of the book is technical,

the second deals with the clinical application of basal metabolism determinations. We find these tests of importance in hyperthyroidism, in hypothyroidism, in fevers and in surgery. In many general conditions, too, determinations of the basal metabolism have been found of great service.

WARD: "ENCYCLOPEDIA OF FOOD"

The Encyclopedia of Food. The Stories of the Foods by which we Live; How and Where they Grow and are Marketed; their Comparative Values and How Best to Use and Enjoy them. Published by Artemas Ward. New York, Number Fifty Union Square. 1923. Price Ten Dollars.

The earlier edition of this rarely beautiful Encyclopedia of Foods was reviewed in CLINICAL MEDICINE for April, 1917. There, we expressed our appreciation of the enormous amount of valuable information contained in its pages, of the beautiful make-up, and of the interest attaching to it generally. During the years, since then, we have had frequent occasion to consult the work and always have been the gainers. Many times, we were thereby, enabled to pass on important information that had been requested by our correspondents.

This new edition is fully up to the high standard of the older one. The same complete and exact information about the most manifold food articles; in addition, matters discussed that are intimately related with food marketing, preparation, eating, etc. So, for instance, we find articles or bacteria, on baking powder, on cookery, on drying, evaporation and dehydration, ice, refrigeration and cold storage-to mention only a few of the headings. All these, in addition to the discussions of the food articles themselves. The illustrations are remarkably fine, the colored plates surprisingly true to life. We can assure our readers that ten dollars, invested in this unusual work, will prove a paying investment.

MEDICAL CLINICS OF NORTH AMERIA

The May issue of The Medical Clinics of North America is the San Francisco number. It contains a wealth of interesting and instructive articles. We note, for instance, one on that much discussed topic, the diagnosis of gall-stones. One deals with the relation of some cases of epilepsy to endocrine dysfunction. Hereditary Myxedema and the

Clinical Value of the Goetsch Test are other articles denoting the general interest in endocrine problems. Other titles are: Diagnosis and Treatment of Pyloric Stenosis; A Discussion of Thick Feeding in Infancy; Rheumatic Endocarditis; Radium Treatment of Carcinoma of the Lip, among many others.

The Medical Clinics of North America is published bimonthly by W. B. Saunders Company, the subscription price for the six annual numbers being \$12.00. The individual articles are unusually appropriate for the information of general practitioners and fully merit the great favor with which this publication is considered.

INTERNATIONAL CLINICS

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles—Edited by Henry W. Cattell, with the collaboration of Chas. H. May and others. Philadelphia. J. B. Lippincott Company. 1923. Volume II. 33d Series. Price, \$10 a year.

The outstanding feature of this volume of the "International Clinics" is a collection of four articles on the timely topic of Insulin, the new organic substance, discovered by

tour articles on the timely topic of Insulin, the new organic substance, discovered by Banting, of Toronto, for the treatment of diabetes mellitus. On that account alone, the volume should prove highly acceptable.

Among the numerous other original articles, we are attracted by one on The Pathology of Will and Voluntary Action. This will help the physician in solving many of the apparently hopeless and puzzling cases that so often confront him. There are other articles of marked merit. The volume is filled with valuable information.

WHITESHIELD: "CLOVERLAND ECHOES"

Cloverland Echoes. By C. F. Whiteshield, M. D. Author of "Legend of the Lonesome Pine." Powers, Mich. 1923. Price, 50 cents.

This attractive little booklet contains a collection of charming poems that breathe the spirit of the great outdoors. They take you into the woods, along the streams and brooks, through the country roads of the beautiful Cloverland, one of the nature spots of Michigan. We have enjoyed reading many of the poems and nibbling at others, as we would at titbits and dainties. The author is not only a physician and a poet but also a fisherman. That will endear him to his brothers of the Isaak Walton tribe. May they never diminish.